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NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

THESIS

IMPROVING RESILIENCE AMONG LAW ENFORCEMENT OFFICERS

by

Brian S. Miller

March 2020

Thesis Advisor:

Mollie R. McGuire

Second Reader:

Patrick E. Miller (contractor)

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IMPROVING RESILIENCE AMONG LAW ENFORCEMENT OFFICERS

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Submitted in partial fulfillment of the
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**MASTER OF ARTS IN SECURITY STUDIES
(HOMELAND SECURITY AND DEFENSE)**

from the

**NAVAL POSTGRADUATE SCHOOL
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ABSTRACT

Law enforcement officers' exposure to stress exacts a toll on them. Agencies have programs designed to mitigate stress and assist officers after a critical incident, but research shows pre-exposure to stressors may help officers better mitigate stress. The goal of this thesis was to examine stress management and psychological resiliency tools that are most promising in reducing stress and building resilience in law enforcement, starting with a review of the effects of chronic and acute stress, post-traumatic stress disorder in officers, and health-related problems associated with stress. This thesis examined wellness and employee assistance programs, critical incident stress management, and psychological first aid, programs all designed to address stress-related problems that occur after critical incidents. Specific attention in this thesis was paid to preventative tactics to reduce stress such as mindfulness and controlled breathing techniques, the use of meditation and yoga, and visualization techniques to prepare officers for potentially stressful events—techniques that could have positive effects in reducing stress-related mental and physical health problems experienced by officers. Based on this review, recommendations to improve wellness programs include incorporating mindfulness techniques, tactical psychological training, and the better use of technology in both ongoing and preventative stress care.

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LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|-------|--|
| APA | American Psychological Association |
| CISD | critical incident stress debriefing |
| CISM | critical incident stress management |
| DEA | Drug Enforcement Administration |
| DPD | Denver Police Department |
| DSM-5 | <i>Diagnostic and Statistical Manual of Mental Disorders</i> |
| EAP | employee assistance program |
| EMT | emergency medical technician |
| HPA | hypothalamus-pituitary-adrenal (axis) |
| MBSR | mindfulness-based stress reduction |
| NYPD | New York Police Department |
| PFA | psychological first aid |
| PNS | parasympathetic nervous system |
| POPPA | Police Organization Providing Peer Assistance |
| PTSD | post-traumatic stress disorder |
| SDPD | San Diego Police Department |
| SNS | sympathetic nervous system |
| SWAT | Special Weapons and Tactics |
| TTM | trauma team member |
| YFFR | Yoga for First Responders |

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EXECUTIVE SUMMARY

Law enforcement officers in the United States are at the forefront of the homeland security enterprise, and their physical and mental well-being are key to our nation's security. Officers are exposed to high levels of stress every day, and over time, that stress exacts a toll on them. In 2017, more police officers committed suicide than were killed in the line of duty, and that trend continued into 2019.¹ Agencies have programs to mitigate stress and assist officers after a critical incident, but help after the incident is not enough. Preventative techniques are needed to mitigate stress and pre-expose officers, so they may better handle stress. This thesis investigates what stress management and psychological resiliency tools are most promising and how their inclusion in academy and periodic training might improve resilience and reduce stress among law enforcement officers, and it offers recommendations on implementing these.

Central to this thesis is stress, and for police officers—who hold positions of authority and make life or death decisions daily—the deleterious effects of stress can have a significant, negative impact on their performance.² The methodology for this thesis involved a qualitative, prescriptive research design with a comprehensive review of existing programs and models to answer the research question, starting with a review of literature involving stress and stress mitigation techniques. It identified and evaluated pre- and post-critical incident programs and techniques; some of these included employee assistance programs, such as the San Diego Police Department's Wellness Unit, and the use of critical incident stress management, psychological first aid, and peer support.

Stress affects our physiology, and this thesis examined mindfulness techniques such as controlled breathing, meditation, and yoga that can have a positive effect on our

¹ Miriam Heyman, Jeff Dill, and Robert Douglas, *The Ruderman White Paper on Mental Health and Suicide of First Responders* (Boston: Ruderman Family Foundation, 2018), http://rudermanfoundation.org/white_papers/police-officers-and-firefighters-are-more-likely-to-die-by-suicide-than-in-line-of-duty/; Joel Shannon, "At Least 228 Police Officers Died by Suicide in 2019, Blue H.E.L.P. Says. That's More Than Were Killed in the Line of Duty," *USA Today*, January 2, 2020, <https://www.usatoday.com/story/news/nation/2020/01/02/blue-help-228-police-suicides-2019-highest-total/2799876001/>.

² Michelle Beshears, "How Police Can Reduce and Manage Stress," *PoliceOne*, March 30, 2017, <https://www.policeone.com/stress/articles/322749006-How-police-can-reduce-and-manage-stress/>.

physiology. Also discussed is the use of guided imagery and visualization, coupled with biofeedback, which may improve performance and reduce stress and anxiety. Some studies have suggested that the use of mindfulness techniques such as meditation has resulted in the downregulation of certain genes related to stress; that is, practice reversed some effects of stress.³ When the body is physiologically taxed through stress, calming breaths can reduce stress. Likewise, yoga has been shown to be good for the mind and reduce anxiety. Guided imagery involves forming a mental picture to induce feelings of relaxation, and the related technique of visualization focuses on mentally rehearsing events to improve performance. Similarly, biofeedback can help monitor the physiological effects of stress. These techniques have been shown effective in reducing stress.

Because these stress-mitigation techniques have worked well in other high-stress occupations (e.g., the military, the medical field, and competitive sports), they have applicability to law enforcement. For example, doctors who employed breathing techniques improved their success rate for certain medical procedures, and professional athletes use visualization techniques in preparation for an important sporting event to hone their skills.⁴ If there are physical and psychological benefits to using mindfulness techniques, perhaps they should be employed in the law enforcement arena. In one study, officers trained in mindfulness-based resilience showed improvement in their resilience and mental and physical health, not to mention significant improvement in regulating their emotions. The officers also displayed reduced levels of stress, fatigue, anger, and burnout.⁵ In another study, officers who used guided imagery and visualization techniques during scenario-based training exercises showed reduced perceived stress levels and displayed

³ Ivana Buric et al., “What Is the Molecular Signature of Mind–Body Interventions? A Systematic Review of Gene Expression Changes Induced by Meditation and Related Practices,” *Frontiers in Immunology* 8 (June 2017): 14, <https://doi.org/10.3389/fimmu.2017.00670>.

⁴ L. Grubish et al., “Implementation of Tactical Breathing during Simulated Stressful Situations and Effects on Clinical Performance,” *Annals of Emergency Medicine* 68 (2016): S115, <https://doi.org/10.1016/j.annemergmed.2016.08.311>; Tracy C. Ekeocha, “The Effects of Visualization & Guided Imagery in Sports Performance” (master’s thesis, Texas State University, 2015), 1, <https://digital.library.txstate.edu/handle/10877/5548>.

⁵ Michael S. Christopher et al., “A Pilot Study Evaluating the Effectiveness of a Mindfulness-Based Intervention on Cortisol Awakening Response and Health Outcomes among Law Enforcement Officers,” *Journal of Police and Criminal Psychology* 31, no. 1 (2016): 15–28, <https://doi.org/10.1007/s11896-015-9161-x>.

better, more effective performance under stress.⁶ Improving the self-regulation of emotions may lead to more effective policing and a healthier, more productive officer.

This thesis concludes with a discussion about reducing the stigma of mental health in law enforcement, the need to acknowledge occupational and organizational stress, and the means to mitigate it over the course of a career. It also recognizes that doing so requires a cultural shift, which will come about slowly. Recommendations include introducing stress-reducing mindfulness and breathing techniques for recruits in academy training and including these in wellness programs throughout the officers' careers. Tactical psychological training, which provides officers with stress-mitigation techniques prior to stressful events, involves the use of scenario-based training coupled with biofeedback to assess officers' stress levels. Agencies should make better use of technology, such as wearable technology that tracks officers' physical conditions and smartphone applications linked to agency wellness programs. The final recommendation is for ongoing and preventive stress care, which may include periodic mental health screenings.

⁶ Bengt B. Arnetz et al., "Trauma Resilience Training for Police: Psychophysiological and Performance Effects," *Journal of Police and Criminal Psychology* 24, no. 1 (April 2009): 5, <https://doi.org/10.1007/s11896-008-9030-y>.

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Finally, I dedicate this thesis to two important men in my life. First, to my father-in-law: Your courage inspired me to write this thesis. Second, to my father, retired Detroit Fire Department Lieutenant Neal Miller: You fought fires for over 25 years with aggressiveness and tenacity, then battled cancer with that same fight until it took you from us. You taught me the meaning of resilience. Over 30 years later, your advice to "just keep your nose in them books, son" still rings true.

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I. INTRODUCTION

A retired federal agent found himself at the edge of a nearby lake with a plan to end his life. He had found himself depressed, experiencing anxiety attacks and other psychological problems. These debilitating issues led him to decide life was no longer worth living, so he walked down to the edge of a nearby lake, and was moments away from suicide when first responders intervened. Afterward, the retired agent bravely sought professional help for debilitating psychological issues that had plagued him. Throughout his 30-year law enforcement career, the agent had experienced an inordinate amount of stress. Early in his career, a drug smuggler had shot him in the face; later, an angry colleague had threatened to shoot and kill him; he had experienced an emergency airplane landing when the cabin filled with smoke; and he suffered guilt when his team nearly drowned interdicting a drug-laden vessel in the Pacific Ocean. These traumatic incidents, coupled with the day-to-day chronic stress that accompanied his law enforcement career, led to a diagnosis of post-traumatic stress disorder. Another contributor to his condition was a police culture in which asking for help had been viewed as a sign of weakness. His physical wounds healed, but the psychological wounds left deeper, unseen scars that nearly proved fatal.

This real-life story hit home in many ways and sparked my interest in this subject—as did my own experiences with critical incidents, police stress, and emerging stress-mitigation techniques over my three decades in law enforcement. The subject of stress and post-traumatic stress disorder (PTSD) is relevant and, as research shows, not at all uncommon for those who serve in law enforcement. Over time, many agencies’ responses to the psychological trauma experienced by their employees has improved dramatically, but could they be doing better? If so, how? These questions are the center of what this thesis explores.

A. PROBLEM STATEMENT

Law enforcement officers are the first line of defense in the homeland security enterprise, and their exposure to stress every day exacts a toll on them. In 2017, more police

officers committed suicide than were killed in the line of duty.¹ General organizational stressors, which represent the everyday stress while working in law enforcement, affect them as do critical incidents, which occur when “features of the incident lie outside the normal range of everyday policing and human experience.”² Examples of critical incidents include serious physical assaults on the officer or his or her partner, lethal-force encounters, serious accidents and significant hazards, and death. Exposure to critical incidents includes direct involvement in the incident, such as being violently assaulted, or indirect involvement, such as witnessing the incident. Stress from critical incidents may also lead to PTSD in some officers. Also, many officers experience a condition called hypervigilance, which is less an increased state of awareness and more a “panic-like state in which decision-making processes break down.”³ Frequent exposure to all of these types of occupational and organizational stress accumulates—whether it is low-level amounts of stress or exposure to critical incidents—and puts officers at an elevated risk for adverse mental and physical problems. As authors Rollin McCraty and Mike Atkinson note in their study of resilience training, over time, “the stress of police work may result in chronic negative emotions such as anger, anxiety, or depression, which can eventually lead to psychological burnout and emotional exhaustion.”⁴

Many agencies have resiliency or wellness programs to help mitigate occupational stress, and almost all have processes in place to assist officers *after* a critical incident, such as critical incident stress management, debriefings, peer support, and chaplaincy programs. Studies indicate that exposure to the stressors of a critical incident before an incident takes place can help reduce the stress once the officer experiences it during the actual critical

¹ Miriam Heyman, Jeff Dill, and Robert Douglas, *The Ruderman White Paper on Mental Health and Suicide of First Responders* (Boston: Ruderman Family Foundation, 2018), 20, http://rudermanfoundation.org/white_papers/police-officers-and-firefighters-are-more-likely-to-die-by-suicide-than-in-line-of-duty/.

² Jack A. Digliani, *Law Enforcement Critical Incident Handbook* (Carson City, NV: Jack A. Digliani, 2012), 3, <http://post.nv.gov/uploadedFiles/postnv.gov/content/Training/Critical%20Incident%20Handbook.pdf>.

³ Paul M. Junger, “Effects of Hypervigilance on Decision-Making during Critical Incidents” (master’s thesis, Naval Postgraduate School, 2018), 2, <http://hdl.handle.net/10945/60416>.

⁴ Rollin McCraty and Mike Atkinson, “Resilience Training Program Reduces Physiological and Psychological Stress in Police Officers,” *Global Advances in Health and Medicine* 1, no. 5 (November 2012): 46, <https://doi.org/10.7453/gahmj.2012.1.5.013>.

incident. However, few tenets of these programs provide specific training and coping skills *prior* to a critical incident.

Post-critical incident care takes place—it is necessary and vital—but is it enough? Studies indicate pre-exposure to the stressors of a critical incident may help reduce stress the officer could experience during the actual critical incident.⁵ With effective, mandatory, pre-critical incident care and training, officers might be better equipped to handle stressors, and this might help bring about a cultural shift in which seeking out support for stress is seen as healthy instead of shameful. Research could help determine whether this would be a cost-effective, preventative approach to improve officers' well-being in a police culture that discourages seeking help. We should not wait to address the issue only after a critical incident has occurred. In keeping with a much-quoted phrase from Benjamin Franklin, “an ounce of prevention is worth a pound of cure.”⁶

B. RESEARCH QUESTION

What stress management and psychological resiliency tools are most promising, and how might their inclusion in academy and periodic training improve resilience and reduce stress among law enforcement officers?

C. RESEARCH DESIGN

This thesis focused on reducing stress and building resilience in law enforcement officers by examining current stress management and psychological resiliency tools available to officers prior to their exposure to stress. The methodology for this thesis involved a qualitative, prescriptive research design with a comprehensive review of existing programs and models to answer the research question, starting with a review of literature involving stress and stress mitigation techniques. What follows is an explanation of acute and chronic stress and its effects on the body and mind and health problems

⁵ Eamonn Arble et al., “Refinement and Preliminary Testing of an Imagery-Based Program to Improve Coping and Performance and Prevent Trauma among Urban Police Officers,” *Journal of Police and Criminal Psychology* 32, no. 1 (March 2017): 2, <https://doi.org/10.1007/s11896-016-9191-z>.

⁶ “Ounce of Prevention, Pound of Cure,” University of Cambridge, October 9, 2012, <https://www.cam.ac.uk/research/news/ounce-of-prevention-pound-of-cure>.

associated with stress, which include PTSD and suicide. An in-depth review of current programs and approaches to building resilience was conducted, and preventative properties of these programs were evaluated. Next are a description and analysis of tools to build resilience and reduce stress, particularly those involving mindfulness techniques.

A plethora of literature addresses stress management and resilience among the general population as well as in other stressful professions such as the military and other first responder organizations. This thesis examines the literature to determine what has and has not worked to reduce stress. Stress-reduction techniques or psychological treatment designed to assist officers after a critical incident is discussed to provide background but is outside the scope of the current project. This thesis focuses on preventative techniques that can be used to mitigate the stress police officers endure and prepare officers for the psychological trauma of dealing with critical incidents or other stressors associated with the law enforcement profession. The goal is to go beyond simply identifying what can help reduce officers' stress and devise a solution and recommendations for how to address this problem. The goal is to answer the question of how we can improve officers' resiliency.

An abundance of research in this area has yet to be applied to law enforcement; the goal is to fill this gap by taking what has been learned in other disciplines regarding preventative stress reduction techniques and apply it to law enforcement. This thesis identifies preventative techniques, most of which involve controlling stress through mindfulness, which includes breathing and visualization techniques. This thesis determined that many of those techniques are applicable to law enforcement for stress reduction and resilience building. The evidence reviewed includes case studies, policy evaluations, peer-reviewed journal articles, academic literature, and other open-source, published documents available on the subject.

Some agencies have revamped their resiliency programs, and this thesis examines at least one program to determine what has worked well. Independent agencies conducted an in-depth study of the resiliency program at the San Diego Police Department, and this thesis includes a comprehensive review of this model and assesses its effectiveness in increasing officer resilience. Another important factor to consider is the staggering number of officer suicides, which prompted a review of this agency's procedures and policies.

D. LITERATURE REVIEW

The factual and theoretical basis for the present research comes from four sub-literature categories: law enforcement stressors, the effects of stress, general stress mitigation techniques, and the application of these techniques to law enforcement before critical incidents to reduce stress and build resilience.

1. Stress

Every human being experiences stress, which can affect us negatively. For police officers, however, who hold positions of authority and make life or death decisions daily, the deleterious effects of stress can have a significant, negative impact on their performance.⁷ Researchers have identified general, work-place stressors specific to law enforcement, such as poor management, a frustrating bureaucracy, and endless administrative tasks as well as the constant exposure to human misery and critical incidents.⁸ In addition, police work has a high degree of accountability to the public and has been listed as one of the top three most stressful occupations reported by both physicians and psychiatrists.⁹ A 2003 British study, which surveyed over 800 officers, ranked organizational stressors—such as lack of communication and consultation, lack of workload control (including excess workload), and work demands infringing on home life—as some of the highest forms of stress.¹⁰ A 2010 study identified nine separate areas of policing that could negatively affect officers' well-being; these ranged from not feeling valued by a supervisor to a perceived lack of advancement in the organization.¹¹ Within

⁷ Michelle Beshears, "How Police Can Reduce and Manage Stress," PoliceOne, March 30, 2017, <https://www.policeone.com/stress/articles/322749006-How-police-can-reduce-and-manage-stress/>.

⁸ Janet Chan, "Negotiating the Field: New Observations on the Making of Police Officers," *Australian & New Zealand Journal of Criminology* 34, no. 2 (August 2001): 114–33, <https://doi.org/10.1177/000486580103400202>; Beshears, "How Police Can Reduce and Manage Stress."

⁹ P. A. Collins and A. C. C. Gibbs, "Stress in Police Officers: A Study of the Origins, Prevalence and Severity of Stress-Related Symptoms within a County Police Force," *Occupational Medicine* 53, no. 4 (June 2003): 257, <https://doi.org/10.1093/occmed/kqg061>.

¹⁰ Collins and Gibbs, 260.

¹¹ B. Juniper, N. White, and P. Bellamy, "A New Approach to Evaluating the Well-Being of Police," *Occupational Medicine* 60, no. 7 (October 2010): 565, <https://doi.org/10.1093/occmed/kqq130>.

the vast literature that addresses the occupational hazards of policing, mounting evidence indicates a profound amount of stress inherent to the job.¹²

Stress from traumatic incidents is common. According to a study in the *New England Journal of Medicine*, more than 70 percent of adults worldwide experience one traumatic event in their lives, and almost 30 percent of adults experience four or more events.¹³ Some research has shown that police work can be a “trauma sensitive occupation, that officers are at high risk of experiencing traumatic events.”¹⁴ One study by Lieberman et al. that sampled over 700 urban police officers in the United States found that officers were exposed to trauma, which—throughout the officers’ careers—averaged “25 recently dead bodies, 10 sexually assaulted children, 14 decaying corpses, three severely injured coworkers (two accidentally, one intentionally), as well as being injured and shot at themselves on more than one occasion.”¹⁵ Thus, while stress from traumatic incidents is common among the general population, statistics show that police officers are exposed to trauma at a far greater rate than the general public, and this unsettles officers.

Law enforcement officers may be at substantial risk for mental and physical health problems due to frequent and sometimes prolonged exposure to traumatic events. As Holly Robinson and her colleagues note, “They are expected to cope with several types of critical incidents such as situations of abuse, those involving victims of serious accidents and hostages, riot control, violent confrontations, failed resuscitation attempts, and assistance

¹² Robyn R. M. Gershon et al., “Mental, Physical, and Behavioral Outcomes Associated with Perceived Work Stress in Police Officers,” *Criminal Justice and Behavior* 36, no. 3 (March 2009): 275–89, <https://doi.org/10.1177/0093854808330015>; Judith A. Waters and William Ussery, “Police Stress: History, Contributing Factors, Symptoms, and Interventions,” *Policing* 30, no. 2 (2007): 172, <https://doi.org/10.1108/13639510710753199>.

¹³ Arie Shalev, Israel Liberzon, and Charles Marmar, “Post-Traumatic Stress Disorder,” *New England Journal of Medicine* 376, no. 25 (June 2017): 2459–69, <https://doi.org/10.1056/NEJMra1612499>.

¹⁴ I. V. E. Carlier, A. E. Voerman, and B. P. R. Gersons, “The Influence of Occupational Debriefing on Post-Traumatic Stress Symptomatology in Traumatized Police Officers,” *British Journal of Medical Psychology* 73 (March 2000): 87–98, <https://doi.org/10.1348/000711200160327>.

¹⁵ Akiva M. Liberman et al., “Routine Occupational Stress and Psychological Distress in Police,” *Policing* 25, no. 2 (2002): 422, <http://dx.doi.org/10.1108/13639510210429446>.

in disasters.”¹⁶ Exposure to even one of these critical incidents can be stress-inducing and may have a negative effect on an officer. Over the course of one’s career, officers exposed to multiple critical incidents may experience the additive effects of stress due to repeated exposure to these stressors. The cumulative effect of these stressful events can have a negative effect on an officer and may contribute to increased stress and resultant problems.

The National Institute of Justice reported on other aspects of work in which law enforcement officers are engaged that augment this stress, one of which is fatigue. Working rotating shifts and extended hours can increase fatigue, which can impair an officer’s physical and mental ability, which could lead to poor decision making.¹⁷ Lack of sleep and continual breaks in an officer’s circadian rhythms can lead to fatigue, both mental and physical; stress induced by fatigue can decrease officers’ ability to do their job.¹⁸

A broad definition by the Cleveland Clinic characterizes stress as “the body’s reaction to any change that requires an adjustment or response,” noting that the body responds or adjusts mentally, physically, and emotionally.¹⁹ The focus of this thesis involves stress from perceived threats, which can affect officers’ mental and physical health negatively, and poor physical and mental health can interfere with police officers’ abilities to do their jobs. Therefore, the relationship between stress and mental and physical health is an important one. Ignoring the mental health of officers could be costly to society.

2. Stress Mitigation Techniques

Stress has a physical effect on our bodies. Any stressful situation could trigger a release of hormones that produces changes in the body, such as tensing of muscles, an

¹⁶ Holly M. Robinson, Melissa R. Sigman, and John P. Wilson, “Duty-Related Stressors and PTSD Symptoms in Suburban Police Officers,” *Psychological Reports* 81, no. 3 (December 1997): 835, <https://doi.org/10.2466/pr0.1997.81.3.835>. See also B. P. R. Gersons and I. V. E. Carlier, “Treatment of Work-Related Trauma in Police Officers: Post-Traumatic Stress Disorder and Post-Traumatic Decline,” in *Handbook of Post-Traumatic Therapy*, ed. M. B. Williams and J. F. Sommer (Westport, CT: Greenwood, 1995), 325–333.

¹⁷ “Officer Work Hours, Stress and Fatigue,” National Institute of Justice, July 31, 2012, <https://www.nij.gov:443/topics/law-enforcement/officer-safety/stress-fatigue/Pages/welcome.aspx>.

¹⁸ National Institute of Justice.

¹⁹ “What Is Stress? Symptoms, Signs & More,” Cleveland Clinic, February 5, 2015, <https://my.clevelandclinic.org/health/articles/11874-stress>.

increased heartrate, and sweating—these reactions are part of our “fight-or-flight” survival mechanism.²⁰ But these stress-induced physiological changes in the body can be mitigated with techniques that can lower stress, one of which is deep breathing. According to the University of Michigan’s Medical Department, deep breathing reduces stress and sends a message to the brain to relax; the things that happen to the body when we are stressed—increased heart rate and breathing rate as well as high blood pressure—all decrease with relaxing breaths.²¹

Another form of stress mitigation involves the use of visualization (or guided imagery) techniques. Research in other disciplines suggests using visualization techniques before encountering a stressful event can be successful. For example, medical doctors have used this technique before performing surgery.²² A 2016 study of doctors intubating patients showed that those who employed breathing techniques improved their success rate.²³ Moreover, professional athletes use visualization techniques to prepare for an important sporting event to hone their skills.²⁴ These techniques are used in other professions, and this thesis argues they translate to the world of police work. Some of these studies are new, some 20 years old. Visualization and guided imagery are often used to relax, reduce anxiety, and improve self-confidence before someone gives a presentation or speaks in public. This pre-event technique involves calming the mind and body; taking slow, deep breaths; eliminating negative thoughts; and visualizing speaking or presenting

²⁰ “Understanding the Stress Response: Chronic Activation of This Survival Mechanism Impairs Health,” Harvard Health Publishing, May 1, 2018, <https://www.health.harvard.edu/staying-healthy/understanding-the-stress-response>.

²¹ Healthwise Staff, “Stress Management: Breathing Exercises for Relaxation,” University of Michigan Medicine, June 28, 2018, <https://www.uofmhealth.org/health-library/uz2255>.

²² Sheryl Ubelacker, “Surgeons Study Benefits of Visualizing Procedures,” *Globe and Mail*, May 12, 2018, <https://www.theglobeandmail.com/life/health-and-fitness/health/surgeons-study-benefits-of-visualizing-procedures/article22681531/>.

²³ L. Grubish et al., “Implementation of Tactical Breathing during Simulated Stressful Situations and Effects on Clinical Performance,” *Annals of Emergency Medicine* 68 (2016): S115, <https://doi.org/10.1016/j.annemergmed.2016.08.311>.

²⁴ Tracy C. Ekeocha, “The Effects of Visualization & Guided Imagery in Sports Performance” (master’s thesis, Texas State University, 2015), 1, <https://digital.library.txstate.edu/handle/10877/5548>.

in public with complete confidence.²⁵ The goal is to visualize this speech going perfectly and imagining the audience reacting exactly how you would want them to react.

Another category of preventative stress reduction involves monitoring officers' physiological responses on the job and during stress-inducing training scenarios. A study incorporated the use of breathing techniques to control officers' heart rates and emotions during training.²⁶ Trainers demonstrated these breathing techniques and monitored breathing rates and cardiovascular activity during the training scenarios. The study showed the use of these techniques allowed the officers to self-regulate their responses to stressors during the training, and the physiological data obtained during the study bore that out. The goal of the study was to demonstrate officers can control their physiology and move into a more coherent state, improving decision making and resulting in stress reduction.²⁷

Combining imagery and breathing techniques, resilience training has decreased stress and increased the ability of specialized police officers who perform critical law enforcement functions. For example, as part of a study, Special Weapons and Tactics (SWAT) officers learned resilience techniques and then underwent simulated, intense training that went beyond normal policing.²⁸ The goal of the study was to determine whether SWAT officers could benefit from resilience training that monitored physiological feedback. The findings revealed that officers could better reduce their heart rates and better self-regulate their stress while in a critical training environment. Improvements were observed even when these scenarios became more intense. One of the authors of that study applied its findings to the Detroit Police Department. In this classroom study, new Detroit Police officers confronted several stressful police scenarios and visualized the steps to take control of the situation. During this visualization technique, officers had to pay attention to their physiological state—heart and breathing rates—and use deep-breathing techniques to

²⁵ Scott Topper, "Public Speaking Tips: The Power of Visualization," *Cure Public Speaking Fear*, May 29, 2015, <https://www.curepublicspeakingfear.com/article/7051-public-speaking-tips-the-power-of-visualization>.

²⁶ McCraty and Atkinson, "Resilience Training Program."

²⁷ McCraty and Atkinson, 49.

²⁸ Judith P. Andersen et al., "Applying Resilience Promotion Training among Special Forces Police Officers," *SAGE Open* 5, no. 2 (June 2015): 1–8, <https://doi.org/10.1177/2158244015590446>.

control stress. Two years later, the officers were polled about their responses to similar, real-life police scenarios, and many reported feeling less stressed and more in control following the real event; officers attributed this outcome to prior training in visualization and breathing training.²⁹ Inducing stress during controlled training operations has shown to inoculate officers and prepare them for real-world stressful events, but the use of visualization and breathing techniques takes this a step further, providing officers with ways to identify and control their stress levels before a critical traumatic event.

Breathing techniques have been used by the military and law enforcement to control stress. Lieutenant Colonel David Grossman coined the phrase “tactical breathing” in his book, *On Combat: The Psychology and Physiology of Deadly Conflict in War and Peace*.³⁰ Grossman advocates the use of diaphragmatic breathing to control stress, and while this tactic is used in the civilian world, tactical breathing has also crossed over to the military and law enforcement realms as a way of reducing stress.³¹

The goal of this thesis is to develop a better understanding of what is needed to increase resilience and reduce officer stress. Hopefully, these findings may lead to policy recommendations and best practices that can better assist officers in strengthening their psychological resilience.

E. CHAPTER OUTLINE

This thesis continues with four chapters. Chapter II focuses on the effects of stress on the body and mind and discusses the physiological and psychological effects of acute and chronic stress and PTSD. It continues examining stress specific to the law enforcement profession and demonstrates the problem of not addressing mental health issues. Finally, it includes a discussion of barriers to care and a police culture that stigmatizes mental health.

²⁹ Arble et al., “Refinement and Preliminary Testing.”

³⁰ David Grossman and Loren W. Christensen, *On Combat: The Psychology and Physiology of Deadly Conflict in War and in Peace* (Milstadt, IL: Warrior Science Publications, 2008).

³¹ Jerry Sheridan, “Tactical Breathing Can Stop Stress on the Spot,” *On Resilience*, June 2, 2011, <http://onresilience.com/2011/06/02/tactical-breathing-can-stop-stress-on-the-spot/>.

Chapter III examines tools and approaches for building resilience in law enforcement, including the San Diego Police Department's Wellness Program, and discusses post-critical incident stress-mitigation techniques, such as critical incident stress management, psychological first aid, and peer support. The chapter concludes with a discussion of the pre-incident properties of these models and their applicability to law enforcement.

Chapter IV discusses preventative tools used to build resilience. It defines and discusses mindfulness techniques, such as controlled breathing, meditation, yoga, and the use of visualization and guided imagery. It also examines the use of biofeedback in these mindfulness techniques and discusses their crossover from other disciplines to law enforcement.

Finally, Chapter V concludes this thesis with a discussion of the findings and their relevance and includes recommendations for further incorporation of these ideas and techniques in law enforcement.

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II. EFFECTS OF STRESS ON BODY AND MIND

Stress is everywhere in our lives. From the threat of a terrorist attack or calamitous weather event to daily hassles like being stuck in traffic or an upcoming deadline, stress inevitably permeates our lives. This chapter details the ways in which stress affects the body and mind as well as our physiological responses to stress. It continues with a discussion of PTSD, suicide, and barriers to care in law enforcement.

A. GENERAL STRESS AND ITS EFFECT ON THE MIND AND BODY

Stress can be defined in many ways, but its most basic dictionary definition is “worry caused by a difficult situation, or something that causes this condition,” or a force changing the shape or the strength of an object.³² Gillian Butler proposes a stimulus-based approach, noting stress comes from pressure being exerted on an object—or a person—and when the external pressure becomes too great, it causes a collapse.³³ A plain example is applying weight (stress) to a load-bearing beam; at some point, the beam will collapse when too much stress is applied. The same is true for our mental health and well-being; the human body and mind are designed to manage stress, but like that load-bearing beam, excessive stress can cause us to break. In his article on stress, Andrew Baum defines stress as “a negative emotional experience accompanied by predictable biochemical, physiological, and behavioral changes that are directed toward adaptation either by manipulating the situation to alter the stressor or by accommodating its effects.”³⁴ The American Psychological Association (APA) contends that stress affects us all differently: sometimes stress can be good, giving ourselves a boost to get through challenging life

³² *Cambridge English Dictionary*, s.v. “stress,” accessed October 31, 2019, <https://dictionary.cambridge.org/us/dictionary/english/stress>.

³³ Gillian Butler, “Definitions of Stress,” Occasional Paper No. 61 (London: Royal College of General Practitioners, August 1993), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2560943/pdf/occpaper00115-0007.pdf>.

³⁴ A. Baum, “Stress, Intrusive Imagery, and Chronic Distress,” *Health Psychology* 6 (1990): 653.

situations, but extreme stress can have devastating health consequences, which are discussed later in this chapter.³⁵

1. Eustress versus Distress

Stress is not always a bad thing; eustress is positive stress, which motivates, focuses, and improves performance. Distress is negative stress, which often induces anxiety, leads to a drop in performance levels, and causes both physical and mental problems. Stress affects us mentally and physically, and the focus of this thesis is the long-term physical effects of negative stress and ways to manage it. Brought into the law enforcement realm, stress can have a negative effect on how police officers do their jobs, and the relationship between stress and mental and physical health is an important one. Ignoring the effects that stress has on the health of an officer is costly, not only to the individual but also to society.

Understanding the effects of stress starts by understanding its physical effects on our bodies. As previously noted, a stressful situation triggers a release of hormones that produces changes in the body, such as tensing of muscles, an increased heartrate, and sweating—these reactions are part of our fight-or-flight survival mechanism.³⁶ While eustress is worth defining and acknowledging, this thesis focuses on distress, or negative stress. For this thesis, the term “stress” connotes negative stress. Primarily, two classes of stress are discussed—acute (short-term) and chronic (long-term) stress—and though they are different, they are intertwined. This relationship is especially important as police officers encounter more acute and chronic stress than people working in other occupations.³⁷

³⁵ “How Stress Affects Your Health,” American Psychological Association, last modified 2013, <https://www.apa.org/helpcenter/stress-facts>.

³⁶ Harvard Health Publishing, “Understanding the Stress Response.”

³⁷ Waters and Ussery, “Police Stress,” 172.

2. Acute Stress

A definition of acute stress offered by the APA is a short-term situation or problem that threatens our well-being.³⁸ This is our body's natural reaction to a threat, something developed long ago in humans to protect us from threats such as predators. Similarly, Harvard Medical School describes acute stress as our fight-or-flight reaction, primarily because it developed as a survival mechanism to help us quickly respond to situations that threatened our well-being.³⁹ Imagine our ancestors roaming the plains in hunter-gatherer times, searching for food and being wary of threats to their survival. In this scenario, our ancestors may have spotted a predatory animal, and their bodies were equipped to deal with that threat by either fighting for survival or fleeing to safety, thus ensuring survival—hence, fight or flight.

Our bodies and minds have been conditioned over millennia to protect us from danger, real or perceived, and that conditioning holds true and continues today. A human in ancient times experiencing stress on the savannah had the same response as a human dealing with acute stress today. For example, a police officer who encounters a suspicious person in a dark alley at night begins to experience stress because the body and mind are preparing for a possible threat. If, without warning, that suspicious person pulls a gun and points it at the officer, the officer will experience a series of immediate psychological and physiological changes to deal with this immediate threat. This example would be classified as acute as it is unpredictable and threatening, and the officer may initially feel as if he has no control over the situation. The stress experienced from this type of threat sets off a sequence of events in the brain and body that enable an individual to fight the threat or flee from it.

3. Physiological Response to Acute Stress

The central nervous system manages our evolutionary fight-or-flight response, shaped by challenges faced by our ancestors over thousands of generations. When our

³⁸ American Psychological Association, "How Stress Affects Your Health."

³⁹ Harvard Health Publishing, "Understanding the Stress Response."

bodies encounter a threat, a collective, sophisticated, physiological response to the danger involves coordinated activations of both the nervous and endocrine systems.⁴⁰ When the body perceives a threat (danger), it prepares itself by jump-starting key autonomic functions (blood pressure, breathing, heartrate) to protect itself from this danger. In other words, the body perceives a threat (e.g., you see danger), and the stress response starts in the brain; the amygdala senses this danger and sends a message to the hypothalamus, the “command center,” which signals the body and sounds the alarm by activating the autonomic nervous system.⁴¹ This system, which controls our involuntary, automatic bodily functions (breathing, heartrate, dilation and constriction of blood vessels), is divided into two parts: sympathetic and parasympathetic.⁴² The sympathetic nervous system (SNS) is fast-acting and responsible for the body’s stress response while the parasympathetic nervous system (PNS) returns the body to its resting state, called homeostasis.⁴³ When the hypothalamus engages the SNS, signals are sent to the adrenal glands, which release a surge of hormones to deal with the perceived threat. In other words, it activates survival bodily functions and reduces those functions not immediately necessary.⁴⁴ According to one medical article, hormones called catecholamines, produced by the adrenal glands, include adrenaline (also known as epinephrine), noradrenaline (or norepinephrine), and dopamine.⁴⁵ The adrenal glands release these into the bloodstream, which causes physiological changes in the body to meet a threat. These changes include the following:

⁴⁰ Richard G. Hunter and Bruce S. McEwen, “Stress and Anxiety across the Lifespan: Structural Plasticity and Epigenetic Regulation,” *Epigenomics* 5, no. 2 (April 2013): 177–94, <https://doi.org/10.2217/epi.13.8>; Harvard Health Publishing, “Understanding the Stress Response.”

⁴¹ Harvard Health Publishing, “Understanding the Stress Response.”

⁴² Harvard Health Publishing.

⁴³ Herbert Benson, Martha M. Greenwood, and Helen Klemchuk, “The Relaxation Response: Psychophysiologic Aspects and Clinical Applications,” *International Journal of Psychiatry in Medicine* 6, no. 1–2 (March 1975): 87, <https://doi.org/10.2190/376W-E4MT-QM6Q-H0UM>.

⁴⁴ Harvard Health Publishing, “Understanding the Stress Response.”

⁴⁵ “Catecholamine Blood Test,” Medline Plus, accessed February 21, 2020, <https://medlineplus.gov/ency/article/003561.htm>.

- Increased heartrate, pumping blood to vital organs and muscles
- More rapid breathing, and the lungs' airways (the bronchi) widen to take in more oxygen with every breath
- Extra oxygen goes to the brain for increased alertness
- Rising pulse rate and blood pressure
- Sharpening of the senses (sight, hearing, feeling, and touch)
- Fat and glucose (blood sugar) are released into the bloodstream to provide energy to the body
- Slowed digestion (see Figure 1)⁴⁶

⁴⁶ Harvard Health Publishing, "Understanding the Stress Response."

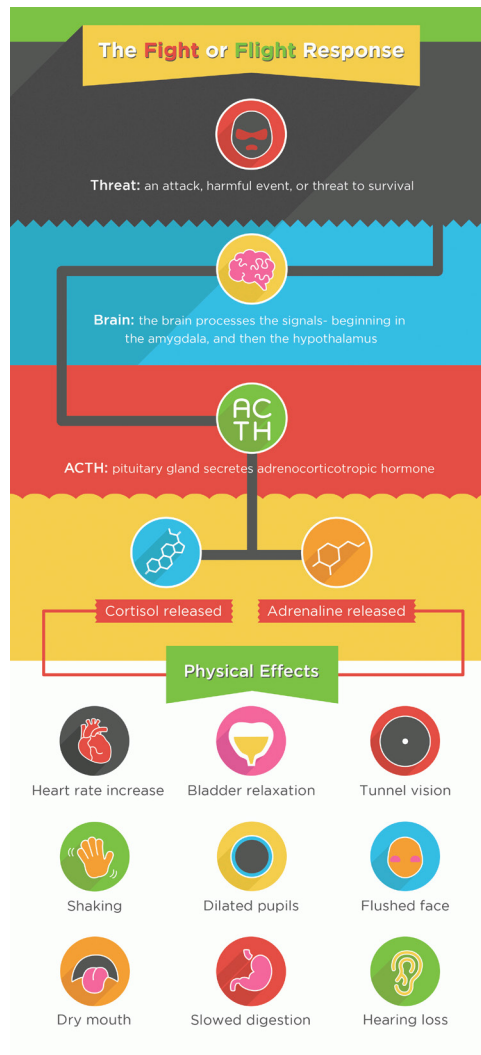


Figure 1. Fight or Flight Response⁴⁷

While the SNS response to acute stress happens very quickly, a second, somewhat slower process occurs involving the hypothalamus-pituitary-adrenal (HPA) axis. The HPA consists of the hypothalamus and pituitary and adrenal glands and is the body's system to help it survive when facing psychological or physical challenges; the glucocorticoid hormone (cortisol in humans) is the end product of this HPA axis.⁴⁸ When the initial surge

⁴⁷ Source: "PTSD – The Wounds That Just Won't Heal," *Dr. Bruce Kehr* (blog), July 3, 2019, <https://drbrucekehr.com/ptsd-veterans-day/>.

⁴⁸ Ryan Jankord and James P. Herman, "Limbic Regulation of Hypothalamo-Pituitary-Adrenocortical Function during Acute and Chronic Stress," *Annals of the New York Academy of Sciences* 1148 (December 2008): 64, <https://doi.org/10.1196/annals.1410.012>.

of adrenaline goes down, the hypothalamus activates the HPA axis, which relies on signals to keep the SNS engaged.⁴⁹ If the brain still sees something dangerous, a biological cascade of events happens, beginning with the hypothalamus, which emits a corticotropin-releasing hormone. According to a Harvard Medical School article about the stress response, this hormone “travels to the pituitary gland, triggering the release of adrenocorticotrophic hormone (ACTH). This hormone travels to the adrenal glands, prompting them to release cortisol.”⁵⁰ During this acute stress or crisis, the body goes into survival mode and diverts energy to organs and tissues that aid in survival (e.g., muscles for strength and endurance); cortisol increases glucose (sugar), which provides energy and also increases the body’s ability to repair tissue. If the threat continues, the body maintains this high level of alertness and cortisol keeps working, curbing non-life-saving functions like the digestive and reproductive systems. Once the threat passes, the body becomes less alert and experiences a drop in cortisol and adrenaline levels; this is the PNS dampening the body’s response to stress.⁵¹ The PNS helps the body return to its normal state once the threat has passed by constricting the pupils, stimulating salivation, slowing the heartrate, constricting the bronchi, and stimulating the digestive system; essentially, the PNS promotes the body’s “rest and digest” or “feed and breed” response.⁵²

Acute stress involves a short-term threat to our bodies, and there is a cascade of physiological changes that happen in the body to adapt to and deal with an immediate threat. But what if the threat is sustained over time? Moreover, what happens to our bodies if acute stressors persist for a long time? When these stressors are present and we constantly feel under attack, our fight-or-flight switch remains in the on position. The following section addresses this phenomenon.

⁴⁹ Harvard Health Publishing, “Understanding the Stress Response.”

⁵⁰ Harvard Health Publishing.

⁵¹ Harvard Health Publishing.

⁵² Harvard Health Publishing.

4. Chronic Stress

Stress that endures or persists for a long time or is constantly recurring is characterized as chronic stress.⁵³ As discussed in the previous sections, the acute stress response is normal and does not typically have a negative effect on our health; our bodies are designed to deal with an acute threat and then return to a normal, homeostatic state. However, if the threat is unyielding or constant, our stress response, instead of protecting us, can damage our health. This reaction occurs because the chronic activation of our stress response system, specifically the body's overexposure to stress hormones like cortisol, can drastically alter many of the body's processes.⁵⁴ A police officer, for example, may experience stressful events that put the officer's safety in jeopardy, but not all stress falls into a life-threatening category. Non-life threatening stressors can endanger the body over time because the body does not know the difference between life-threatening stress and life-annoying stress: the stress response is essentially the same. In other words, whether the stress is life-threatening or life-annoying, experiencing stress can lead to increased blood pressure, digestive problems, suppression of the immune system, and other related health problems.⁵⁵

5. Health Problems Associated with Chronic Stress

The link between stress and chronic disease is complex; this relationship can be affected by the type, amount, and persistence of the stressor as well as our learned coping mechanisms and "biological vulnerability" (i.e., genetics and constitutional factors).⁵⁶ In an article for the *Journal of the American Medical Association*, Bruce McEwen and Eliot Stellar contend that some evidence suggests exposure to the heightened or fluctuating

⁵³ "Acute vs. Chronic Stress," Center for Studies on Human Stress, accessed October 31, 2019, <https://humanstress.ca/stress/understand-your-stress/acute-vs-chronic-stress/>.

⁵⁴ "The Role of Cortisol in the Body," Healthdirect Australia, April 2018, <https://www.healthdirect.gov.au/the-role-of-cortisol-in-the-body>.

⁵⁵ American Psychological Association, "How Stress Affects Your Health."

⁵⁶ Neil Schneiderman, Gail Ironson, and Scott D. Siegel, "Stress and Health: Psychological, Behavioral, and Biological Determinants," *Annual Review of Clinical Psychology* 1 (2005): 607–28, <https://doi.org/10.1146/annurev.clinpsy.1.102803.144141>.

“neural or neuroendocrine response” brought on by chronic stress can lead to disease.⁵⁷ Additionally, evidence suggests that chronic stress can increase behaviors adopted to help one cope with stress; these behaviors have detrimental health consequences of their own, and they include smoking, drug and alcohol use, and eating disorders.⁵⁸ Neil Schneiderman et al., in a journal article about the linkage between stress and health, report that people who lived in more stressful environments tend to smoke more and have a higher incidence of death due to diseases associated with smoking and stress. Chronic stress has been linked to the increased use of alcohol to self-medicate anxiety and stress.⁵⁹

Over time, researchers have learned about chronic stress and how it affects our health over the long term, noting that when the stress response mechanism is triggered over and over again, it takes a toll on our bodies.⁶⁰ According to Harvard Medical School, chronic stress contributes to high blood pressure, promotes the formation of artery-clogging deposits, and causes brain changes that may contribute to anxiety, depression, and addiction. More preliminary research suggests that chronic stress may also contribute to obesity, through both direct (causing people to eat more) and indirect (decreasing sleep and exercise) mechanisms.⁶¹

Chronic diseases such as cancer and diabetes are on the rise and have become a complex public-health problem in the United States, and chronic stress is linked to the vast majority of many of these long-term health problems.⁶² A byproduct of our stress response

⁵⁷ Bruce S. McEwen and Eliot Stellar, “Stress and the Individual: Mechanisms Leading to Disease,” *Archives of Internal Medicine* 153, no. 18 (1993): 2093–2101, <https://doi.org/10.1001/archinte.1993.00410180039004>.

⁵⁸ Schneiderman, Ironson, and Siegel, “Stress and Health,” 611.

⁵⁹ Schneiderman, Ironson, and Siegel, 611.

⁶⁰ Harvard Health Publishing, “Understanding the Stress Response.”

⁶¹ Harvard Health Publishing.

⁶² “Statistics about Diabetes,” American Diabetes Association, last modified March 22, 2018, <https://www.diabetes.org/resources/statistics/statistics-about-diabetes>; “About Chronic Diseases,” Centers for Disease Control and Prevention, October 23, 2019, <https://www.cdc.gov/chronicdisease/about/index.htm>; Ronald C. Kessler et al., “Lifetime Prevalence and Age-of-Onset Distributions of DSM-IV Disorders in the National Comorbidity Survey Replication,” *Archives of General Psychiatry* 62, no. 6 (June 2005): 593–602, <https://doi.org/10.1001/archpsyc.62.6.593>; “Cancer Stat Facts: Cancer of Any Site,” National Cancer Institute, accessed January 17, 2020, <https://seer.cancer.gov/statfacts/html/all.html>; Yin Paradies, “A Review of Psychosocial Stress and Chronic Disease for 4th World Indigenous Peoples and African Americans,” *Ethnicity & Disease* 16, no. 1 (Winter 2006): 295–308.

is cortisol, which is released into our bloodstream and acts on different parts of the body, helping us respond to danger, increasing the rate at which our body metabolizes glucose (turning the food we eat into energy), and helping control blood pressure and inflammation.⁶³ It is needed for our natural, healthy fight-or-flight response, but too much cortisol can have negative health effects—so the key is ensuring balance. The production of too much cortisol over time can lead to serious health-related maladies.

Studies have shown that even moderately high levels of cortisol in our bodies can cause such chronic health issues as hypertension, osteoporosis, and type 2 diabetes. One of the roles of cortisol is to increase the appetite and to tell the body to change its metabolism to store fat, and this can lead to weight gain. Obesity-related healthcare costs can be astronomical; in 2008, one study put the U.S. bill for obesity-related costs at nearly \$147 billion.⁶⁴ Cortisol affects the body's metabolism, which is relevant as metabolism affects our sleep patterns; a lack of sleep or disruption in sleep patterns can contribute to chronic fatigue syndrome. According to a Harvard Medical School article, cortisol can contribute to mental cloudiness or “brain fog,” and it can also inhibit our immune systems, making us more infection-prone.⁶⁵ In extreme cases, significantly high levels of cortisol can bring about Cushing's syndrome (or hypercortisolism), a very rare but serious disease marked by weight gain, muscle weakness, fatigue, and anxiety.⁶⁶ While health problems associated with high cortisol levels are bad enough for the general population, they are particularly concerning for law enforcement officers, whose role in the community is to ensure public safety. Therefore, the officer's ability to perform at an optimal level could have a direct bearing on public safety. An obese officer, generally speaking, cannot perform physically as well as an officer who stays at a normal, healthy weight. The extra weight carried by a heavier officer also stresses the officer's body—the feet, knees, and lower back pay the

⁶³ Healthdirect Australia, “The Role of Cortisol in the Body.”

⁶⁴ Sarah J. Spencer and Alan Tilbrook, “The Glucocorticoid Contribution to Obesity,” *Stress* 14, no. 3 (May 2011): 233–46, <https://doi.org/10.3109/10253890.2010.534831>.

⁶⁵ Marcelo Campos, “Is Adrenal Fatigue ‘Real’?,” *Harvard Health Blog*, February 28, 2018, <https://www.health.harvard.edu/blog/is-adrenal-fatigue-real-2018022813344>.

⁶⁶ April Kahn and Jill Seladi-Schulman, “Everything You Need to Know about Cushing's Syndrome,” Healthline, November 19, 2019, <https://www.healthline.com/health/cushing-syndrome>.

price. When cortisol levels affect sleep patterns, it can also contribute to already fatigued officers, many of whom are working irregular shifts; with increased stress and the resulting increased cortisol levels in the body, an officer may become chronically fatigued. Finally, officers must frequently make split-second, life-or-death decisions, so increased stress and cortisol levels that contribute to reduced mental acuity (i.e., brain fog) can seriously affect the judgment and decision-making abilities of officers.

B. POST-TRAUMATIC STRESS DISORDER

Any discussion of stress in law enforcement would be incomplete without including PTSD. While the focus of this thesis is on mitigating the effects of chronic stress, PTSD is a significant consideration for the law enforcement officer because, by the nature of its work, policing involves exposure to violent, traumatic events that can lead to PTSD.

PTSD has taken many names and descriptions over the past hundred years or so. In the years following World War I, returning veterans complained of “shell shock,” and in the aftermath of World War II, this phenomenon was referred to as “combat fatigue.”⁶⁷ The APA defines PTSD as “a psychiatric disorder that can occur in people who have experienced or witnessed a traumatic event such as a natural disaster, a serious accident, a terrorist act, war/combat, rape or other violent personal assault.”⁶⁸ In 2013, the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5), which defines all conditions representative of mental health disorders, revised the PTSD criteria requiring “exposure to a traumatic or stressful event as a diagnostic criterion.”⁶⁹ The DSM-5 includes the following criteria for defining a traumatic event:

Exposure to actual or threatened death, serious injury, or sexual violence in one (or more) of the following ways:

- Directly experiencing the traumatic event

⁶⁷ “What Is Posttraumatic Stress Disorder?,” American Psychiatric Association, January 2020, <https://www.psychiatry.org/patients-families/ptsd/what-is-ptsd>.

⁶⁸ American Psychiatric Association.

⁶⁹ “DSM-5 Criteria for PTSD,” BrainLine, February 22, 2018, <https://www.brainline.org/article/dsm-5-criteria-ptsd>.

- Witnessing, in person, the traumatic event
- Learning that the traumatic event occurred to a close family member or close friend. In cases of actual or threatened death of a family member or friend, the event must have been violent or accidental
- Experiencing repeated or extreme exposure to aversive details of the traumatic event (e.g., first responders collecting human remains; police officers repeatedly exposed to details of child abuse).⁷⁰

Many think about PTSD only in the context of combat or war veterans, but PTSD can affect anyone. According to the National Institute of Mental Health, going through trauma is common: about half of all U.S. adults will go through at least one traumatic event, but the majority never develop PTSD.⁷¹ Being involved in a serious car accident, being the victim of a serious crime, and being affected by a natural disaster are examples of traumatic events. The Department of Veterans Affairs' National Center for PTSD estimates that about 8 percent of the U.S. population will develop PTSD in their lives, and approximately eight million adults are diagnosed with PTSD yearly—though this is not a high number compared to all those in the United States who have experienced trauma.⁷² These rates rise when examining police officers. According to one study, 7–19 percent of police officers experience PTSD symptoms, compared to just over 3 percent of the general U.S. population.⁷³ While some in the general population may experience trauma and become afflicted with PTSD, the rates are understandably higher among police officers from much of what they are exposed to over the course of a career.

⁷⁰ American Psychiatric Association, *Diagnostic and Statistical Manual of Mental Disorders*, 5th ed. (Washington, DC: American Psychiatric Association, 2013), 271, <https://doi.org/10.1176/appi.books.9780890425596>; Center for Substance Abuse Treatment, *Trauma-Informed Care in Behavioral Health Services*, Treatment Improvement Protocol Series 57 (Rockville, MD: Substance Abuse and Mental Health Services Administration, 2014), 82, https://www.ncbi.nlm.nih.gov/books/NBK207201/pdf/Bookshelf_NBK207201.pdf.

⁷¹ “Post-Traumatic Stress Disorder (PTSD),” National Institute of Mental Health, last modified November 2017, <https://www.nimh.nih.gov/health/statistics/post-traumatic-stress-disorder-ptsd.shtml>.

⁷² “How Common Is PTSD in Adults?,” Department of Veterans Affairs, accessed December 14, 2019, https://www.ptsd.va.gov/understand/common/common_adults.asp.

⁷³ Gordon J. G. Asmundson and Jennifer A. Stapleton, “Associations between Dimensions of Anxiety Sensitivity and PTSD Symptom Clusters in Active-Duty Police Officers,” *Cognitive Behaviour Therapy* 37, no. 2 (2008): 66–75, <https://doi.org/10.1080/16506070801969005>; and Tiffany S. Thomas, “PTSD: ‘The Dirty Little Secret of Law Enforcement,’” *Crime Report*, March 21, 2018, <https://thecrimereport.org/2018/03/21/ptsd-the-dirty-little-secret-of-law-enforcement/>.

Many officers check all the boxes regarding the DSM-5's trauma criteria in that they have been exposed to death or serious injury, by either directly experiencing a traumatic event or witnessing one. Furthermore, officers may learn of colleagues who have been involved in a traumatic event (e.g., knowing officers under one's charge were in harm's way or learning a partner was seriously wounded in an attack) or find themselves at risk, having been exposed repeatedly to traumatic events (e.g., a homicide detective constantly processing murder scenes). Though not every officer involved in a traumatic event will become afflicted with PTSD, the high exposure to these types of events puts officers at a higher risk of developing PTSD.

As discussed earlier in this thesis, acute stress or trauma can lead to chronic stress, and the effects are cumulative. Police officers can also suffer from a cumulative form of PTSD. As opposed to traditional PTSD, which can result from a single or brief exposure to a traumatic event, cumulative PTSD may be caused by repeated, prolonged exposure to stress and trauma.⁷⁴ When a critical incident occurs, such as an officer killing a suspect, agencies have programs in place to assist the officer in processing and dealing with the event. However, Michelle Beshears, criminal justice faculty member at American Military University, argues,

Cumulative PTSD can be even more dangerous than PTSD caused from a single traumatic event, largely because cumulative PTSD is more likely to go unnoticed and untreated. When a catastrophic event occurs, such as an officer-involved shooting, most departments have policies and professionals to help an officer address and deal with the aftermath of an event. However, the build-up of events that arise throughout an officer's career generally do not warrant such specialized attention. As a result, an officer with cumulative PTSD is less likely to receive treatment.⁷⁵

To a certain extent, Beshears is right. Agencies typically do roll out immediate assistance when a critical incident takes place; officers are given time off, and counseling is available. Programs in place assist officers with the day-to-day stress (or cumulative stress) of the

⁷⁴ "Police Officers Experience High Rates of PTSD," National Police Support Fund, August 14, 2019, <https://nationalpolicesupportfund.com/police-officers-experience-high-rates-of-ptsd/>.

⁷⁵ Michelle Beshears, "Police Officers Face Cumulative PTSD: Unlike a Physical Injury, a Mental Traumatic Injury Can Happen Almost Daily," PoliceOne, April 3, 2017, <https://www.policeone.com/health-fitness/articles/police-officers-face-cumulative-ptsd-tgd6zLqtGwdG3wg2/>.

job, and these programs are discussed in depth in the next chapter. So far, this chapter has discussed acute stress, chronic stress, and PTSD in general and regarding police officers, but there are stressors specific to law enforcement that should be addressed.

1. Sources of Psychological Stress in Law Enforcement

A significant amount of research shows that police officers may be at risk for physical and psychological health problems, burnout, and suicidal ideations due to the effects of occupational stress.⁷⁶ Officers face stressors in dealing with community members, which include subjects who are hostile toward officers and witnesses or victims who are emotionally distraught. In addition to these stressors unique to policing, officers also face significant stressors common to working in a police organization. In other words, two sources of stress are associated with policing: (1) dealing with the community and the day-to-day operational aspects of policing (occupational stressors) and (2) dealing with the criminal justice system, supervisors, peers, and the officer's organization (organizational stressors).

Occupational stressors involve police work itself: being involved in or witnessing critical incidents such as shootings, car accidents, violent assaults, and mass disasters. Others include enduring long stretches of boring patrols and then responding to life-threatening calls. Even during a boring patrol shift, the officer must be on guard, which can lead to hypervigilance. In a study that examined the most frequent stressors in law enforcement, Violanti et al. observed that "many reported stressors dealt with violent situations. Responding to family disputes (83%) was reported as the most frequent stressor and exposure to battered children (27%) was the most highly rated."⁷⁷ The authors also noted, "Killing someone in the line of duty . . . and experiencing a fellow officer being killed" were two of the most stressful events, even though (fortunately) they happened

⁷⁶ Gary A. Adams and Jill Buck, "Social Stressors and Strain among Police Officers: It's Not Just the Bad Guys," *Criminal Justice and Behavior* 37, no. 9 (September 2010): 1030, <https://doi.org/10.1177/0093854810374282>.

⁷⁷ John M. Violanti et al., "Highly Rated and Most Frequent Stressors among Police Officers: Gender Differences," *American Journal of Criminal Justice* 41, no. 4 (December 2016): 646, <https://doi.org/10.1007/s12103-016-9342-x>.

infrequently.⁷⁸ In another study, one officer illustrated the experience of being involved in witnessing the death of a car accident victim:

I can remember it. It was like an explosion when he hit the tree, and the front left passenger had sort of been thrown out through the windscreen, and the car was sort of bent up like, from the impact of the tree, and I can remember just sitting in my passenger seat stunned, you know. I'm thinking "This can't have happened."⁷⁹

Aside from the regular stressors of police work, internal organizational stressors affect the officer. For example, many frontline officers may feel they have the least amount of input in their departments, yet more is demanded of them. An agency may have restrictive policies, seemingly excessive or unnecessary paperwork, and often poor (or a lack of) proper equipment. Officers may become frustrated with the criminal justice system, especially when criminals may receive light sentences or not be prosecuted at all. Also, public practices and societal concerns, such as allegations of misconduct (including police brutality and racial profiling), adverse legal decisions, and governmental decisions involving funding (or lack thereof), confront the police.

In a study that explored occupational psychological injury in police work, whether from traumatic event stress or the more common cumulative stress, Michelle R. Tuckey et al. found organizational stressors more prevalent than stress from critical incidents. The authors describe this chronic organizational stress as follows: "Like the erosion of beach sand dunes by constant tidal movement, the effects of chronic organizational stressors are initially imperceptible but eventually become visible and harmful."⁸⁰ They further note that exposure to these high-frequency stressors can reduce an officer's ability to cope; these stressors are more prevalent than those involving "frontline police duties," and they might lead to "adverse psychological outcomes."⁸¹ From this same study, the authors quote an

⁷⁸ Violanti et al., 646.

⁷⁹ Michelle R. Tuckey, Peter C. Winwood, and Maureen F. Dollard, "Psychosocial Culture and Pathways to Psychological Injury within Policing," *Police Practice & Research* 13, no. 3 (June 2012): 230, <https://doi.org/10.1080/15614263.2011.574072>.

⁸⁰ Tuckey, Winwood, and Dollard, 225.

⁸¹ Tuckey, Winwood, and Dollard, 225.

officer who summed it up this way: “It’s funny, but I guess when you become a police officer you expect to be ill-treated out on the streets. But when it comes from within, who are just using and abusing you, it has a very different effect.”⁸²

2. Demonstrating the Problem

Failing to address the mental health of police officers may lead to psychological and physical health problems. Frequent exposure to all these types of stress accumulates—whether it is low-level stress or exposure to critical incidents—and puts officers at an elevated risk for adverse mental and physical problems. As McCraty and Atkinson note in their study of resilience training, over time, law enforcement stressors may lead to PTSD, emotional problems, increased alcohol use, and possibly suicide.⁸³

Burnout is defined as “a form of enduring psychological strain that entails exhaustion from and diminished interest in work.”⁸⁴ Not everyone experiences burnout, and though it affects people in other occupations, it is particularly prevalent in law enforcement, mostly because of the stressors previously described. Over the course of an officer’s career, this stress and frustration may lead to burnout, which presents in an officer with feelings of exhaustion (physical and emotional) and a reduced feeling of accomplishment in the work she performs. According to McCraty and Atkinson, burnout can lead to depression, anxiety, and dependence on alcohol, and these can affect a police department, given high absentee rates at work because of burnout and resultant health problems.⁸⁵

According to the APA, “Depression . . . negatively affects how you feel, the way you think and how you act. . . . It can lead to a variety of emotional and physical problems

⁸² Tuckey, Winwood, and Dollard, 234.

⁸³ McCraty and Atkinson, “Resilience Training Program,” 46.

⁸⁴ William P. McCarty et al., “Burnout in Blue: An Analysis of the Extent and Primary Predictors of Burnout among Law Enforcement Officers in the United States,” *Police Quarterly* 22, no. 3 (September 2019): 280, <https://doi.org/10.1177/1098611119828038>.

⁸⁵ McCarty et al., 280.

and can decrease a person's ability to function at work and at home.”⁸⁶ The National Institute of Mental Health notes that depression is a very common mental health disorder, with approximately 7.1 percent of U.S. adults having experienced at least one major depressive episode in 2017.⁸⁷ Anyone can be affected by depression, and the APA lists factors that could increase its likelihood: besides one's biochemistry, genetics, and personality, the APA notes that environmental factors, including “continuous exposure to violence, neglect, abuse or poverty,” could play a role in depression.⁸⁸ Police officers might be at risk due to the environmental factors they face on the job. If left untreated, depression can lead to maladaptive coping strategies, such as substance abuse, risk-taking behaviors, poor or delayed decisions, and the use of excessive force.⁸⁹

C. SUICIDE

Because of their exposure to life-threatening events, law enforcement officers and other first responders face a higher risk of PTSD, a mental health condition sometimes associated with suicide.⁹⁰ As previously stated, in 2017, more police officers committed suicide than were killed in the line of duty; according to Jay Ruderman et al. in their April 2018 white paper, 129 officers lost their lives in the line of duty in 2017 while 140 took their own lives.⁹¹ Ruderman's numbers were similar for firefighters and emergency medical technicians (EMTs): In 2017, 93 firefighters or EMTs were killed in the line of duty while 103 committed suicide.⁹² The study notes the need for more conversations about mental health in the first-responder world. It also outlines that officers often feel they would

⁸⁶ “What Is Depression?” American Psychiatric Association, January 2017, <https://www.psychiatry.org/patients-families/depression/what-is-depression>.

⁸⁷ “Major Depression,” National Institute of Mental Health, last modified February 2019, <https://www.nimh.nih.gov/health/statistics/major-depression.shtml>.

⁸⁸ American Psychiatric Association, “What Is Depression?”

⁸⁹ Elizabeth Velazquez and Maria Hernandez, “Effects of Police Officer Exposure to Traumatic Experiences and Recognizing the Stigma Associated with Police Officer Mental Health: A State-of-the-Art Review,” *Policing: An International Journal* 42, no. 4 (2019), <https://doi.org/10.1108/PIJPSM-09-2018-0147>.

⁹⁰ Thomas, “PTSD.”

⁹¹ Heyman, Dill, and Douglas, *The Ruderman White Paper*, 120.

⁹² Heyman, Dill, and Douglas, 19.

be looked down upon or placed on administrative duties if they spoke up about PTSD or depression. The study pushes for a discussion on mental health programs in departments and agencies and “highlights programs and policies to push the issue, such as peer-to-peer assistance, mental health check-ups, time off after responding to a critical incident and family training programs to identify the warning signs of depression and PTSD.”⁹³ According to the Centers for Disease Control and Prevention, the suicide rate for officers is high, about 23 per 100,000, while the rate for the general population is about 14 per 100,000.⁹⁴

A more recent description of this problem comes from the Denver Police Department (DPD). According to a December 27, 2019, *Denver Post* article, seven Denver public safety employees died by suicide over the past two years; these included five police employees, one fire department employee, and one 9-1-1 dispatcher.⁹⁵ Based on the size of the department, these numbers are almost seven times higher than the national average. In one particularly poignant case, DPD Officer Brian Barry, a 35-year veteran of the force, was diagnosed with PTSD in 2017. Barry had noted this diagnosis did not come from a specific incident but rather from cumulative trauma over a career that had exposed him to horrific conditions.⁹⁶ In 2018, he was nearly pushed to the edge when he responded to the suicide death of his brother-in-law and fellow DPD officer. Barry’s PTSD roared back and he seriously contemplated suicide. Barry sought the help he needed, but in doing so, he worried about his livelihood: Would he be forced to retire or be seen as unfit for duty? And how would his fellow officers perceive him? These are serious thoughts and the potential consequences of asking for help.

⁹³ Christal Hayes, “‘Silence Can Be Deadly’: 46 Officers Were Fatally Shot Last Year. More Than Triple That—140—Committed Suicide,” *USA Today*, April 12, 2018, <https://www.usatoday.com/story/news/2018/04/11/officers-firefighters-suicides-study/503735002/>.

⁹⁴ Timothy Roufa, “Exploring the Problem of Police Suicides: Get the Facts on Suicides among Law Enforcement Officers,” *Balance Careers*, accessed November 3, 2018, <https://www.thebalancecareers.com/exploring-the-problem-of-police-suicides-974877>.

⁹⁵ Elise Schmelzer, “Seven Denver Public Safety Employees Have Died by Suicide in the Past Two Years; a Rate Far Higher Than National Average,” *Denver Post*, December 22, 2019, <https://www.denverpost.com/2019/12/22/denver-first-responders-suicide-ptsd/>.

⁹⁶ Schmelzer.

D. BARRIERS TO CARE

Officers face hurdles that dissuade or prevent officers from seeking care for mental health issues. Officers seek assistance only if they know there will be no repercussions for using available programs. The problem is that many do not seek help for a variety of reasons: from the stigma attached to seeking help for psychological issues, to a police culture that preaches self-reliance, to the fear that seeking help will have a detrimental effect on one's job.

In an article about diminishing the stigma of mental illness, author Peter Byrne defines stigma as “a sign of disgrace or discredit, which sets a person apart from others.”⁹⁷ A key portion of this definition is being set apart or feeling different from others. Byrne further delves into the experience of stigma, which includes shame, secrecy, isolation, exclusion, and discrimination.⁹⁸ Stigma has been described as a “significant barrier” to seeking mental health treatment.⁹⁹ Unfortunately, even after years of enlightenment and the battle against stigmas surrounding mental health, treatment is still perceived as a sign of weakness, and those with mental health issues feel a profound sense of shame. Such shame has been described as “a painful emotion that responds to a sense of failure to attain some ideal state.”¹⁰⁰ In other words, those who suffer from mental health disorders may feel different from others and, therefore, ashamed of their suffering, even though it is completely normal to experience these emotions.

Stigma takes on a different form for mental or physical illness. Imagine first an officer telling his peers he must take time off work due to a broken arm. Imagine then that

⁹⁷ Peter Byrne, “Stigma of Mental Illness and Ways of Diminishing It,” *Advances in Psychiatric Treatment* 6, no. 1 (January 2000): 65, <https://doi.org/10.1192/apt.6.1.65>.

⁹⁸ Byrne, 65.

⁹⁹ Amy K. White, Gregory Shrader, and Jared Chamberlain, “Perceptions of Law Enforcement Officers in Seeking Mental Health Treatment in a Right-to-Work State,” *Journal of Police and Criminal Psychology* 31, no. 2 (2016): 143, <https://doi.org/10.1007/s11896-015-9175-4>; Laurence Miller, “Tough Guys: Psychotherapeutic Strategies with Law Enforcement and Emergency Services Personnel,” *Psychotherapy* 32, no. 4 (January 1995): 596, <http://dx.doi.org/10.1037/0033-3204.32.4.592>.

¹⁰⁰ Shahram Heshmat, “5 Factors That Make You Feel Shame: Owning up to Shame Will Allow It to Dissipate with Time,” *Science of Choice* (blog), October 4, 2015, <https://www.psychologytoday.com/blog/science-choice/201510/5-factors-make-you-feel-shame>.

he tells these same colleagues he must take time off because he is feeling depressed. In both cases, a health issue that may be out of the officer's control affects him. Seeking help for the mental health problem carries stigma, but the physical one does not. In their review of research on police officers' mental health, which explored why officers do not seek treatment for mental health, authors Elizabeth Velazquez and Maria Hernandez suggest that the stigma of asking for help represents the largest barrier.¹⁰¹

Treatment of mental health issues in policing needs to be addressed, but police culture itself may be seen as a barrier for officers who seek treatment. Officers who admit their vulnerability, feel helpless, or are afraid to make a mistake fear they may be seen as inadequate or not prepared to do their job.¹⁰² Police agencies develop their officers to be self-reliant and strong and to show no weakness. Badge of Life is an organization dedicated to training law enforcement personnel about mental health and suicide prevention, and Marla W. Friedman chairs its board of directors.¹⁰³ In an article about building better police officers, Friedman discusses the police culture's response to trauma, conflict, death, and other horrors that occur in police work. She notes that several responses to these events define a police culture that eschews help-seeking:

1. "Suck it up! What did you think you were going to see?"
2. "This is the job, handle it or move on to another career."
3. "Don't show weakness, the bad guys can smell it."
4. "Stuff your feelings and reactions down, that's the only way to survive this job."
5. "Suck it up, there's no crying in law enforcement." . . .
6. "Don't embarrass yourself or me with your overreaction. Dead bodies are part of what we handle. Get used to it."
7. "Your OIS [officer involved shooting] was legit, quit worrying about it."¹⁰⁴

This "police culture" can be applied to others in the first-responder realm. A concern for first responders' mental health and the "just deal with it" culture was brought to light in

¹⁰¹ Velazquez and Hernandez, "Effects of Police Officer Exposure."

¹⁰² White, Shrader, and Chamberlain, "Perceptions of Law Enforcement Officers," 144.

¹⁰³ "Board of Directors," Badge of Life, accessed December 27, 2019, <https://badgeoflife.org/bods>.

¹⁰⁴ Marla Friedman, "Master Police Coaches - Building a Better Cop," Badge of Life, accessed December 27, 2019, <https://badgeoflife.org/articles>.

Canada in May 2019 after firefighters refused to return to the scene of a traumatizing accident to perform a “washdown” of the roadway.¹⁰⁵ Firefighters had responded to a deadly highway traffic accident and, after tending to accident victims, returned to their quarters, only to be called back to conduct a washdown (using water to dilute bodily fluids on the roadway). They refused, citing the stress of returning to a traumatic scene to perform what amounted to a clean-up operation.¹⁰⁶ This incident also drew sharp criticism from a veteran fire captain, whose response illustrates a culture among many in the profession: “I have been to accidents where I had to pick up someone’s arm. . . . I would tell my guys, ‘suck it up,’ I know it’s ugly, but that’s what we’re paid to do.”¹⁰⁷ On one hand, some were angry at the department for appearing not to do its job—failing to return to the scene to conduct the washdown—while on the other hand, many lauded the decision to put the mental health of the firefighters first.

Trust is significant in law enforcement culture as there is solidarity among police officers; this tight bond isolates the officers from those who are not in law enforcement.¹⁰⁸ There are cops, and then there is everyone else. This trust plays a part in how officers view colleagues who have sought mental health treatment, and it plays a vital role in deciding to speak to a mental health professional outside law enforcement. Many officers fail to seek treatment for mental health issues as they are concerned about how they will be viewed or judged by their peers. If an officer seeks treatment for a mental health issue and then returns to duty, some officers may be wary of the officer or question whether she is strong enough mentally to perform her job. On another note, studies have shown that officers are more willing to share thoughts and feelings about a traumatic event with colleagues than with psychologists or other medical professionals.¹⁰⁹ The key is establishing trust between the

¹⁰⁵ Jeremy Grimaldi, “PTSD Concerns Take Centre Stage after Firefighters’ Refusal to Clean Up Traumatic Scene Led to More Hwy. 400 Chaos,” *The Star*, July 17, 2019, <https://www.thestar.com/news/gta/2019/07/17/ptsd-concerns-take-centre-stage-after-firefighters-refusal-to-clean-up-traumatic-scene-led-to-more-hwy-400-chaos.html>.

¹⁰⁶ Grimaldi.

¹⁰⁷ Grimaldi.

¹⁰⁸ White, Shrader, and Chamberlain, “Perceptions of Law Enforcement Officers,” 144.

¹⁰⁹ White, Shrader, and Chamberlain, 144.

medical professional and the officer, and this trust can be achieved if the mental health professional has an understanding of police culture. While trust is important in dealing with mental health issues and medical professionals, confidentiality also plays a significant role.

Finally, many officers avoid seeking professional mental health because they feel doing so may affect their job.¹¹⁰ Officers may feel reluctant to see a psychologist or counselor because what they divulge to that medical professional could lead to an examination of the officer's fitness for duty. If the officer divulges something that could put the agency at risk, this information may be used in the agency's examination of the officer to determine whether he is fit for duty. Therefore, fitness-for-duty results and records of psychological services may be a part of an officer's personnel file and might be used against the officer. Agencies often make clear to officers what is confidential and what is not, but even the perception that something divulged during counseling sessions might end up in their files may dissuade officers from seeking help.

In summary, stress is everywhere in our lives; some stress is good for us, and some is bad. Acute and chronic stress can negatively affect officers, both physically and psychologically. Such stress can lead to physical illness, disease, and sometimes PTSD. Some occupational and organizational stressors are unique to law enforcement, and neglecting to manage stress properly can lead to burnout, depression, and suicide. Officers may realize they need psychological help, but stigma, police culture, and concerns about fitness-for-duty examinations may dissuade them from seeking care. So, what are departments doing about this? The following chapter offers some of the current tools and approaches to managing stress and building resilience.

¹¹⁰ Miller, "Tough Guys," 594.

III. TOOLS AND APPROACHES TO BUILDING RESILIENCE

The APA defines resilience as “the process of adapting well in the face of adversity, trauma, tragedy, threats or significant sources of stress—such as family and relationship problems, serious health problems or workplace and financial stressors. It means ‘bouncing back’ from difficult experiences.”¹¹¹ This chapter discusses the tools and approaches commonly used to build resilience in police organizations. Although this thesis focuses on preventative tactics in building resilience, discussing and understanding the current models help to determine what is working and not working in the most up-to-date training. This chapter examines a resilience program used by the San Diego Police Department as well as discusses post-critical incident techniques and, in doing so, highlights some of the pre-critical incident properties of these models.

A. SAN DIEGO POLICE DEPARTMENT’S WELLNESS UNIT

Located in Southern California, the city of San Diego has an estimated population of 1.4 million, making it the eighth-largest city in the United States and the second-largest in California.¹¹² As of 2018, San Diego is considered the safest city in the United States, based on violent crime rates from the Federal Bureau of Investigation, and ranks among the safest big cities in the nation. As reported by the *San Diego Union-Tribune*, the San Diego Police Department (SDPD) investigated 5,221 violent crimes in 2017, which equates to a rate of 3.7 crimes per 1,000 people.¹¹³ While San Diego recorded its lowest overall crime rate in 2017, that did not mean there was an absence of violent crime, a point particularly important for the men and women who police the city. Though relatively safe compared to other major cities in the United States, San Diego is still a big city with big-city crime problems. SDPD officers confront varying degrees of violence daily, and this

¹¹¹ “Building Your Resilience,” American Psychological Association, February 1, 2020, <https://www.apa.org/topics/resilience>.

¹¹² “QuickFacts: San Diego County, California,” Census Bureau, accessed July 11, 2019, <https://www.census.gov/quickfacts/fact/table/sandiegocitycalifornia,sandiegocountycalifornia,CA>.

¹¹³ Lyndsay Winkley and Lauryn Schroeder, “San Diego Boasted Lowest Violent Crime Rate of Biggest Cities Last Year,” *San Diego Union-Tribune*, September 26, 2018, <https://www.sandiegouniontribune.com/news/public-safety/sd-me-fbi-crime-20180925-story.html>.

violence, along with other stressors of the job, takes its toll on officers. To help its officers deal with traumatic events and declining morale as well as manage the ever-increasing stress of policing, the SDPD formed a Wellness Unit.

The SDPD has jurisdiction over the city of San Diego and boasts approximately 1,836 sworn police officers as of June 2018.¹¹⁴ Like most major metropolitan police departments, the SDPD maintains a rigid rank structure from the chief of police and command staff down to first-line supervisors and patrol officers on the street. The SDPD has divided the neighborhoods of the city into nine divisions and has specialized units to investigate and respond to crimes such as robberies, homicides, arsons, and sex crimes, to name a few. The SDPD has prided itself as being “America’s Finest,” a take on the city’s self-imposed moniker of “America’s Finest City,” but a couple of violent line-of-duty deaths—as well as misconduct and corruption incidents within the ranks starting in 2011 and continuing for a few years—caused the SDPD to take a hard look at what it was doing to tend to its officers’ needs. In 2011, the SDPD faced a crisis as it reeled from significant misconduct on the part of 10 of its officers; their crimes ranged from driving under the influence to sexual assault, and all took place between February and August of that year.¹¹⁵ This behavior was destroying officer morale and increasing officers’ stress levels as the SDPD’s credibility among the community waned, making it increasingly difficult to manage occupational stress.

Officers sworn to protect and serve a community may naturally feel a sense of pride in doing so, especially if community members appreciate the officers’ presence and work in their neighborhood. This positive feedback from the community can help boost the officers’ morale by indicating their work and sacrifices are appreciated and that they are respected in the community. However, respect is a two-way street. Community members expect officers to police their neighborhoods fairly and ethically, which earns respect and

¹¹⁴ Emily Sorensen, “San Diego Police Facing Ongoing Officer Shortage,” *Rancho Bernardo News Journal*, June 14, 2018, <https://www.sandiegouniontribune.com/rancho-bernardo/sd-cm-pow-news-chief-police-qa-20180612-story.html>.

¹¹⁵ Elizabeth Miller and Madeline Sloan, “The San Diego Police Department’s Officer Wellness Program,” *Community Policing Dispatch* 11, no. 6 (June 2018), https://cops.usdoj.gov/html/dispatch/06-2018/sdpd_wellness.html.

appreciation. Conversely, when officers commit crimes and break the very laws they have sworn to uphold, it erodes public confidence. The actions of a few bad officers reflect negatively on the good officers, dragging down morale. When officers respond to incidents in a community where they are not appreciated or, worse, not trusted, it can increase officers' stress.

Of the cases of officer misconduct, none was more egregious than the case of former SDPD Officer Anthony Arevalos. According to a 2015 report by Community Oriented Policing Services in collaboration with the Police Executive Research Forum on the matter,

A number of cases of serious criminal misconduct by SDPD officers . . . emerged, including the March 2011 arrest of SDPD Officer Anthony Arevalos, which drew national media attention to these issues. Arevalos was initially charged with multiple counts of sexual assault under color of authority. His arrest was the result of allegations that an unnamed 32-year-old woman had been sexually assaulted by Arevalos in the bathroom of a convenience store.¹¹⁶

It was later determined that Arevalos had victimized eight other women, and as a result, the officer was charged with 21 felony crimes committed while on duty from 2009 to 2012. In February 2012, Arevalos earned an eight-year prison sentence, and the City of San Diego was ordered to pay \$5.9 million in damages to one victim.¹¹⁷ It could be said that though the financial cost was significant, the damage to the SDPD's reputation, specifically in how its officers were perceived in the community, took its toll on "America's Finest."

In addition to the Arevalos case and other misconduct, the SDPD was reeling from a spate of line-of-duty deaths, off-duty deaths, and police suicides, all of which contributed to an increased level of stress among officers. In 2010, SDPD Officer Christopher Wilson volunteered to assist San Diego County probation officers and deputy U.S. marshals, who

¹¹⁶ Police Executive Research Forum, *Critical Response Technical Assessment Review: Police Accountability—Findings and National Implications of an Assessment of the San Diego Police Department* (Washington, DC: Community Oriented Policing Services, 2015), 9, <https://www.sandiego.gov/sites/default/files/legacy/police/pdf/perfrpt.pdf>.

¹¹⁷ R. Stickney, "Timeline: Anthony Arevalos Case," NBC 7 San Diego, November 14, 2011, <http://www.nbcsandiego.com/news/local/Anthony-Arevalos-San-Diego-Police-Sex-Assault-Timeline-133820683.html>.

were conducting a compliance check of a probationer. Upon conducting a search of the apartment, Officer Wilson was struck in the head by gunfire and fatally wounded.¹¹⁸ In 2011, SDPD Officer Jeremy Henwood was killed when a subject, who was fleeing a crime, pulled up next to him while he was on patrol and, without warning, leveled his shotgun and murdered the unsuspecting officer.¹¹⁹ In his final act of kindness on this earth, 30 minutes earlier, Officer Henwood had bought cookies at a local fast food restaurant for a teenager short on money; Officer Henwood had smiled at the teen, told him to work hard, and then returned to patrol his beat; this thoughtful act was captured on surveillance video and went viral.¹²⁰ Finally, in 2011, SDPD Detective Donna Williams and her 18-year-old daughter were killed by the detective's own son, and weeks later, SDPD Officer David Hall took his own life; Hall had been arrested earlier in the year for causing an off-duty hit-and-run accident while he was intoxicated.¹²¹ Suffice it to say this was such a trying time for the men and women of the SDPD that the precipitating events led SDPD brass to construct a departmental program to help officers cope with such tragic events and critical incidents.

In July 2011, on her official first day as the leader of the recently formed Wellness Unit, a middle-of-the-night phone call awakened SDPD Captain Sarah Creighton. She immediately summoned grief counselors to assist officers at SDPD stations city-wide as she had just learned veteran SDPD Detective Williams and her daughter had been stabbed to death hours earlier. Weeks later, she dealt with Officer Hall's suicide; then, a mere six

¹¹⁸ "Police Officer Christopher Alan Wilson," Officer Down Memorial Page, accessed July 11, 2019, <https://www.odmp.org/officer/20560-police-officer-christopher-alan-wilson>. The author attended this funeral.

¹¹⁹ "Police Officer Jeremy Nicholas Henwood," Officer Down Memorial Page, accessed July 11, 2019, <https://www.odmp.org/officer/20924-police-officer-jeremy-nicholas-henwood>.

¹²⁰ Monica Garske, "Teen, Last to See Slain Cop Alive, Pays Respects," NBC 7 San Diego, August 7, 2014, <http://www.nbcsandiego.com/news/local/Daveon-Scott-Remembers--Slain-SDPD-Officer-Jeremy-Henwood-270415031.html>.

¹²¹ Shauntel Lowe, "SD Police Officer Facing DUI Charge Commits Suicide," Patch (Rancho Bernardo), August 1, 2011, <https://patch.com/california/ranchobernardo-4sranch/san-diego-police-officer-facing-criminal-charges-found-dead>.

days passed until Officer Henwood was tragically killed.¹²² For Captain Creighton and the other two members of the Wellness Unit, this was baptism by fire.

According to a *San Diego Union-Tribune* news article, resources had always been available for officers seeking assistance; however, those resources were not well-promoted; after several suicides in the mid-1990s, the SDPD added peer counseling for officers (11 SDPD officers took their own lives from 1981 to 2011).¹²³ Therefore, the Wellness Unit was designed not to pass judgment on officers but rather to advocate for any officer (or civilian employee) who needed help. And, in 2011, with the rash of police misconduct and resultant maladaptive coping methods used (e.g., extramarital affairs, alcohol, physical, and sexual abuse), SDPD employees needed help. In her interview for the news article, Captain Creighton noted that the only way for this program to succeed (i.e., offering non-judgmental assistance) would be through trust, specifically in keeping the employees' issues confidential. She stated, "We're not good about seeking help. We're supposed to be in control . . . we are held to a higher standard, and we should be. We are also subject to human nature, and sometimes officers use the wrong coping mechanisms, as anyone else would."¹²⁴

Captain Creighton and Sergeants Tod Bassett and Steve Connolly stood up the Wellness Unit in 2011, and the overarching goal was to respond to the SDPD's needs by creating and sustaining "a robust culture of wellness that prioritize[d] the physical and emotional health of the SDPD's members."¹²⁵ Their efforts resulted in the creation of one of the best initiatives in the country: the National Law Enforcement Officers Memorial Fund recognized the SDPD Wellness Unit as the top wellness program of 2016.¹²⁶ The Wellness Unit has grown and, as of 2017, comprises two sergeants, one officer, and one

¹²² Kristina Davis, "Officers Get Help from SDPD's Wellness Unit," *San Diego Union-Tribune*, August 6, 2011, <https://www.sandiegouniontribune.com/sdut-police-captain-heads-departments-wellness-unit-2011aug06-htmlstory.html>.

¹²³ Davis.

¹²⁴ Davis.

¹²⁵ Police Executive Research Forum, *Building and Sustaining an Officer Wellness Program: Lessons from the San Diego Police Department* (Washington, DC: Community Oriented Policing Services, 2018), 1, <https://www.policeforum.org/assets/SanDiegoOSW.pdf>.

¹²⁶ Police Executive Research Forum, 1.

civilian dispatcher, all of whom report to an assistant chief. Now-retired Assistant Chief Sarah Creighton notes, “I learned that if your organization thinks something is important, it needs to be on the organizational chart and have the highest-ranking person possible in charge of it. It needs to be a visible, dedicated arm of the organization. Otherwise, it’ll fall away.”¹²⁷

Members of the Wellness Unit help manage resources that are available to SDPD personnel. This unit is considered a type of gatekeeper; that is, employees can contact the Wellness Unit with whatever general problems they are experiencing, and a unit member can direct the employees to the appropriate resource. One such resource is the SDPD’s Peer Support Program, which supports employees who are experiencing a difficult period in their life or who have been involved in shootings or in-custody deaths.¹²⁸ Another resource is the SDPD Chaplain Program, which was created in 1969 and consists of community faith leaders who offer spiritual and emotional support to employees and their families. These religious leaders also participate in ride-alongs with officers, which build trust and rapport.¹²⁹ The third resource consists of an independent group of counselors and psychologists who SDPD employees may consult, and the fourth resource is the SDPD’s Alcohol/Substance Abuse Program, designed to help employees and their family members recover from substance abuse.¹³⁰ The SDPD Wellness Unit is an excellent example of a current approach to building resilience in a major police organization.

In addition to wellness units, other tools and approaches help build resilience within officers to deal with the stress of law enforcement, particularly the stress of critical incidents, such as being involved in a shooting. If one were looking at a shooting on a timeline moving from left to right, the shooting occurs in the middle. Therefore, in police jargon, what happens leading up to the shooting on the timeline is referred to as “left of bang,” and what happens after is considered “right of bang.” Although this thesis focuses

¹²⁷ Police Executive Research Forum, 15.

¹²⁸ Police Executive Research Forum, 35.

¹²⁹ Police Executive Research Forum, 40.

¹³⁰ Police Executive Research Forum, 40, 43.

on preventative care (i.e., what happens left of bang), understanding what tools and approaches are available to help an officer *after* a critical incident (i.e., right of bang) is important. Such knowledge is crucial because police departments have recognized the importance of caring for officers after they have been involved in a critical incident. Because departments have addressed right-of-bang issues, this intervention demonstrates the departments' willingness to provide officers with care. Understanding how departments already assist their officers during this critical time is key to developing preventative tools for their wellness. One of programs used to help officers is critical incident stress management.

B. CRITICAL INCIDENT STRESS MANAGEMENT

Early in the 1980s, critical incident stress management (CISM) was developed to benefit those working in emergency medical services in the United States. Since then, it has been further developed and refined. According to Stephen Regel—an experienced psychotherapist with over 30 years of experience treating PTSD—CISM refers to a “comprehensive, systematic and integrated multi-component crisis intervention package that enables individuals and groups to receive assessment of need, practical support, and follow up following exposure to traumatic events in the workplace.”¹³¹ In other words, if an individual is exposed to trauma through work, CISM is designed to help that employee manage it from a psychosocial and emotional standpoint.

A 2000 study by Everly, Flannery, and Mitchell describes seven core integrated elements of CISM:

1. individual and organizational pre-critical incident preparation;
2. post-mass disasters demobilization procedures;
3. individual crisis counseling (acute/short-term);
4. defusings, or small, brief group discussions, to help reduce symptoms;
5. critical incident stress debriefings (CISDs), are group sessions used to help facilitate a referral to mental health practitioners and/or to facilitate closure;

¹³¹ Stephen Regel, “Post-Trauma Support in the Workplace: The Current Status and Practice of Critical Incident Stress Management (CISM) and Psychological Debriefing (PD) within Organizations in the UK,” *Occupational Medicine* 57, no. 6 (September 2007): 411, <https://doi.org/10.1093/occmed/kqm071>.

6. techniques to help families deal with crises; and
7. offer referrals to affected parties for psychological treatment.¹³²

This thesis does not discuss all elements of CISM (see Table 1) in depth because most focus on post-critical incident care, which often involves debriefings and psychological assistance. While it touches on post-incident care for reference and context, it concentrates more on pre-incident elements.

¹³² George S. Everly, Raymond B. Flannery, and Jeffrey T. Mitchell, “Critical Incident Stress Management (CISM): A Review of the Literature,” *Aggression and Violent Behavior* 5, no. 1 (2000): 24, [https://doi.org/10.1016/S1359-1789\(98\)00026-3](https://doi.org/10.1016/S1359-1789(98)00026-3).

Table 1. Elements of Critical Incident Stress Management¹³³

| | INTERVENTION | TIMING | ACTIVATION | GOAL | FORMAT |
|-----|--|--|--|--|---------------------------------|
| 1. | Pre-crisis preparation. | Pre-crisis phase. | Crisis anticipation. | Set expectations. Improve coping. Stress management. | Groups/ Organizations. |
| 2a. | Demobilizations & staff consultation (rescuers). | Shift disengagement. | Event driven. | To inform and consult, allow psychological decompression. Stress management. | Large groups/ Organizations. |
| 2b. | Crisis Management Briefing (CMB) (civilians, schools, business). | Anytime post-crisis. | | | |
| 3. | Defusing. | Post-crisis (within 12 hours). | Usually symptom driven. | Symptom mitigation. Possible closure. Triage. | Small groups. |
| 4. | Critical Incident Stress Debriefing (CISD) | Post-crisis (1 to 10 days; 3-4 weeks mass disasters) | Usually symptom driven; can be event driven. | Facilitate psychological closure. Sx mitigation. Triage. | Small groups. |
| 5. | Individual crisis intervention (1:1). | Anytime, Anywhere. | Symptom driven | Symptom mitigation. Return to function, if possible. Referral, if needed. | Individuals. |
| 6. | Pastoral Crisis Intervention. | Anytime, Anywhere. | Whenever needed. | Provide spiritual, faith-based support. | Individuals/ Groups. |
| 7a. | Family CISM. | Anytime. | Either symptom driven or event driven. | Foster support & communications. Symptom mitigation. Closure, if possible. Referral, if needed. | Families/ Organizations. |
| 7b. | Organizational consultation. | | | | |
| 8. | Follow-up/Referral. | Anytime. | Usually symptom driven. | Assess mental status. Access higher level of care, if needed. | Individual/ Family. |

[From : Everly, G. & Mitchell, J. (1999) Critical Incident Stress Management (CISM): A New Era and Standard of Care in Crisis Intervention. Ellicott City, MD: Chevron Publishing.]

¹³³ Source: George S. Everly Jr. and Jeffrey T. Mitchell, "The Debriefing 'Controversy' and Crisis Intervention: A Review of Lexical and Substantive Issues," *International Journal of Emergency Mental Health* 2, no. 4 (Fall 2000): 214.

An essential part of a CISM program is the CISD and follow-up for ongoing psychological support, if necessary.¹³⁴ For example, an officer may be exposed to trauma in a critical incident while responding to a violent vehicle accident that results in multiple deaths, perhaps involving children. Under the CISM model, the involved officers would meet with a crisis counselor (mental health professional) in a group setting after a specified period to discuss the incident (i.e., the CISD). Additionally, the officer would also meet alone with a counselor in a secondary CISD. Many agencies make attendance at these debriefings mandatory because officers may experience signs and symptoms of PTSD following their involvement in the critical incident.¹³⁵

C. EMPLOYEE ASSISTANCE AND PEER SUPPORT PROGRAMS

In addition to CISM, other programs assist officers not just after exposure to critical incidents but also for other job stressors. For example, the Drug Enforcement Administration (DEA), like many law enforcement agencies, has an employee assistance program (EAP). According to the DEA's website, "EAP is a free, confidential service providing DEA employees and their family members with mental health consultation, preventive education, brief counseling, crisis intervention, traumatic incident response, and referral to community resources to deal with problems in their work and personal lives."¹³⁶ Within EAP is DEA's trauma team, whose members are selected by their peers to participate in a three-day training course designed to provide the agent with "non-clinical supportive interventions in the following situations: kidnapping, shooting, suicide, and other threats of violence."¹³⁷ The second phase includes comprehensive training to identify signs of stress affecting agents or their families.

¹³⁴ Arble et al., "Refinement and Preliminary Testing," 412.

¹³⁵ Melvin Hokanson and Bonnita Wirth, "The Critical Incident Stress Debriefing Process for the Los Angeles County Fire Department: Automatic and Effective," *International Journal of Emergency Mental Health* 2, no. 4 (Fall 2000): 249.

¹³⁶ "Employee Assistance Program (EAP)," Drug Enforcement Administration, accessed October 8, 2018, <https://www.dea.gov/employee-assistance-program-eap>.

¹³⁷ P. R. Paradise, "DEA Trauma Team," *Law and Order* 39, no. 6 (June 1991): 97.

Trauma team members (TTMs) offer psychological assistance to fellow agents and participate in mandatory clinical briefings following a shooting or other critical incident.¹³⁸ TTMs can deploy to any critical or traumatic incidents and work as peer counselors, and they attend debriefings with employees involved in the event. TTMs are not licensed clinicians but specially trained peers who offer assistance. Sometimes those experiencing trauma from the event might be more willing to share thoughts and feelings about a traumatic event with TTMs—who share kinship as agents—rather than with psychologists or other medical professionals. This is an important point, as explained by Mike McEvoy, a former forensic psychologist who directs emergency medical services for the New York State Association of Fire Chiefs. In an article for *Fire Engineering*, McEvoy wrote, “Since CISD involves talking with relative strangers about a traumatic event, it is interesting to note that 85 percent of emergency responders talk afterward about critical incidents and prefer to talk with colleagues and peers. Fifteen percent prefer not to talk at all about an event.”¹³⁹ More simply put, cops feel safer and more comfortable talking to other cops. Law enforcement and other first responders are reluctant to confide in civilians outside their occupational world as most civilians do not understand what police officers see, feel, and experience. Therefore, if police share at all, they will share their feelings with other officers due to a shared kinship.

Idaho State Police has a wellness program and, in 2019, integrated this program with officers’ smartphones, partnering with a company that brings the department’s Trooper Wellness Kit directly to the trooper out on the road.¹⁴⁰ This application provides troopers with access to over 30 topics including depression, emotional health, sleep, mindfulness techniques, and stress management.¹⁴¹

¹³⁸ Paradise, “DEA Trauma Team.” The author of this thesis served as a DEA special agent and TTM from 2001 to 2016.

¹³⁹ Mike McEvoy, “Psychological First Aid: Replacement for Critical Incident Stress Debriefing?,” *Fire Engineering* 158, no. 12 (December 2005), <https://www.fireengineering.com/articles/print/volume-158/issue-12/features/psychological-first-aid-replacement-for-critical-incident-stress-debriefing.html>.

¹⁴⁰ “Idaho State Police Launches High-Tech Officer Wellness Program in Partnership with Cordico,” Cordico, October 28, 2019, <https://www.cordico.com/2019/10/28/idaho-state-police-launches-high-tech-officer-wellness-program-in-partnership-with-cordico/>.

¹⁴¹ Cordico, “High-Tech Officer Wellness Program.”

D. NEW YORK CITY POLICE DEPARTMENT'S PEER ASSISTANCE PROGRAM

Following a spate of 26 suicides, the New York City Police Department in 1996 formed the Police Organization Providing Peer Assistance (POPPA) program. Its website describes the organization as “a volunteer police support network committed exclusively to providing a confidential, safe and supportive environment for police officers and retirees.”¹⁴² POPPA assists officers in coping with stress and is dedicated to reducing PTSD by using peers and mental health professionals.¹⁴³ Much like the DEA’s EAP and trauma team, POPPA has deployed trauma response team members to critical incidents, such as shootings, and most notably, it deployed them after the 9/11 attacks. According to its website, POPPA also offers training in the prevention of suicide: officers may take a 15-hour “intensive, interactive and practice-dominated course designed to help caregivers recognize risk and learn how to intervene to prevent the immediate risk of suicide.”¹⁴⁴

In a 2003 article for *Traumatology*, Scurfield et al. discuss the clinical experiences of POPPA, particularly the post-9/11 response, as they relate to CISM and conclude there is a need for a “Phase 2 CISM intervention model.”¹⁴⁵ Approximately 4,000 uniformed NYPD personnel received CISM debriefings after the 9/11 attacks. These debriefings consisted of consultations with uniformed peer leaders, informal counseling, formal briefings before CISM, and formal CISM interventions. These CISM debriefings were “one-shot” interventions, according to the authors.¹⁴⁶ After 9/11, they concluded that “initial CISM interventions [could] be quite helpful to a number of those participating in such debriefings” but admitted many participants “did not appear to derive much benefit from

¹⁴² “Mission,” Police Organization Providing Peer Assistance, accessed November 3, 2018, <http://poppanewyork.org/about/mission/>.

¹⁴³ Police Organization Providing Peer Assistance.

¹⁴⁴ “Training,” Police Organization Providing Peer Assistance, accessed February 2, 2020, <https://poppanewyork.org/programs/training/>.

¹⁴⁵ Raymond Monsour Scurfield et al., “Continuing Psychological Aftermath of 9/11: A POPPA Experience and Critical Incident Stress Debriefing Revisited,” *Traumatology* 9, no. 1 (March 2003): 31, <https://doi.org/10.1177/153476560300900103>.

¹⁴⁶ Scurfield et al., 36.

the CISM interventions.”¹⁴⁷ In other words, the interventions were effective for some but not for others. Scurfield et al. admitted there was no compelling data that single CISM interventions were effective, and they recommended on-going contact with officers and emergency workers to reduce these victims’ anger, rage, and anxiety. Moreover, they also recommended that a second debriefing (or additional debriefings) take place days, weeks, or months later.¹⁴⁸

Because of the ineffectiveness of these initial CISM interventions—essentially the first phase of the CISM model—Scurfield et al. proposed a second phase CISM intervention model that included secondary debriefings. The proposed second phase would focus on first responders traumatized by the events of 9/11. Citing factors distinctive to the trauma of that event for survivors, which included reactions to the political and social aspects of the event, the authors encouraged the use of “cognitive reframing to address self-destructive” behaviors.¹⁴⁹ This phase would focus on what happens psychologically to people as a result of terrorist attacks and “stress reduction and coping strategies to better deal with prolonged or exacerbated post-9/11 reactions.”¹⁵⁰ In other words, one debriefing would not suffice, and additional follow-up was needed due to the scale and complexity of the trauma endured by the 9/11 survivors.

E. PSYCHOLOGICAL FIRST AID

In addition to employee assistance programs and CISM, psychological first aid (PFA) is another current tool used to treat those affected by a significant trauma. According to the National Child Traumatic Stress Network (NCTSN) and the National Center for PTSD (who combined to design this program), PFA is a means of providing psychosocial support to individuals and families immediately after experiencing trauma. PFA comprises a set of eight core actions to help ameliorate the initial stress caused by a traumatic incident. Based on the principle of “do no harm,” PFA is provided for application by civilians

¹⁴⁷ Scurfield et al., 37.

¹⁴⁸ Scurfield et al., 39.

¹⁴⁹ Scurfield et al., 39.

¹⁵⁰ Scurfield et al., 40.

(including officers), not necessarily mental health professionals although they are almost always involved as well.

An analogy drawn from a tenet of EMT training illustrates the difference between PFA and CISM. An EMT is trained in basic life-saving first-aid, but an EMT is not a doctor. An EMT is expected to stabilize a patient until a better-trained medical professional can evaluate the patient. In basic training, prospective EMTs are often told “just don’t make the patient worse.” Similarly, regarding PFA, one should not expect a person trained in PFA to do the work of a psychologist but simply to offer psychosocial care to help the patient and not make the patient worse.

PFA consists of a set of helping actions (components) designed to reduce post-traumatic event stress when it first appears. These are applied to help both short- and long-term functioning.¹⁵¹ The National Child Traumatic Stress Network outlines the eight components of PFA:

- 1) contact and engagement,
- 2) safety and comfort,
- 3) stabilization,
- 4) information gathering regarding current needs and concerns,
- 5) practical assistance,
- 6) connection with social support,
- 7) information on coping, and
- 8) connection with appropriate services.¹⁵²

If, for example, an officer responds to the scene of a traumatic automobile accident and is met by a peer support officer, that person may use PFA as outlined in Table 2:

¹⁵¹ Cristian Vasile, “An Analysis of Psychological Trauma Interventions,” *Procedia: Social and Behavioral Sciences* 127 (April 2014): 784, <https://doi.org/10.1016/j.sbspro.2014.03.354>.

¹⁵² “About PFA,” National Child Traumatic Stress Network, accessed February 22, 2020, <https://www.nctsn.org/treatments-and-practices/psychological-first-aid-and-skills-for-psychological-recovery/about-pfa>.

Table 2. Examples of PFA Components¹⁵³

| PFA COMPONENTS | EXAMPLES |
|------------------------------------|---|
| Contact and Engagement | Contact the involved officer |
| Safety and Comfort | Comfort the officer and offer assurance |
| Stabilization | Help stabilize the officer |
| Information Gathering | Determine what the officer may need |
| Practical Assistance | Offer a ride home, food, or drink |
| Connection with Social Support | Connect the officer with friends to offer support |
| Information on Coping | Provide a pamphlet and offer guidance on coping |
| Connection to Appropriate Services | Offer contact information for clinician |

These PFA components differ from the seven CISM elements primarily because PFA does not involve debriefings or counseling sessions. Recall from CISM that three of those elements involve acute (short-term) crisis counseling, small group discussions or defusings, and longer group discussions (i.e., CISD). PFA focuses more on identifying the immediate needs of the officer (i.e., safety, practical, social, and emotional needs). One similarity between PFA and CISM involves an element of psychological assessment or connection and treatment with appropriate services—that is, connection with mental health professionals if necessary. Both PFA and CISM list this as a final step in their respective processes.

In their article for *Disaster Health*, authors Shultz and Forbes note that PFA is not a new intervention, but “it is better conceptualized as documenting and operationalizing good common sense—those activities that sensible, caring human beings would do for each other anyway.”¹⁵⁴ Lay providers—in the case of law enforcement, by officers for officers—not mental health professionals deliver this service, which distinguishes PFA from CISM. As previously discussed, CISM involves counseling, debriefings, and defusings, all led by mental health professionals; PFA is administered by peers, not medical

¹⁵³ Adapted from National Child Traumatic Stress Network, “About PFA.”

¹⁵⁴ James M. Shultz and David Forbes, “Psychological First Aid: Rapid Proliferation and the Search for Evidence,” *Disaster Health* 2, no. 1 (March 2014): 3, <https://doi.org/10.4161/dish.26006>.

professionals. According to the National Child Traumatic Stress Network, “PFA is designed to reduce the initial distress caused by traumatic events and to foster short- and long-term adaptive functioning and coping.”¹⁵⁵

F. PRE-INCIDENT PROPERTIES OF THESE MODELS

Though most of these crisis-management programs deal with the aftermath of a traumatic incident, many of them also include pre-crisis and traumatic incident components. As mentioned above, the first element of CISM involves preparing for a crisis, both on an individual and organizational level, and it goes to the prophylactic view of crisis intervention. According to Everly and Mitchell, this initial step involves a sort of psychological immunization, with the goal of identifying and then strengthening any potential vulnerabilities to bolster one’s resilience in the face of psychological crisis or trauma.¹⁵⁶ If knowledge is power, then the first phase of this crisis intervention technique involves informing the officer about how he might feel and respond in a crisis.

For example, officers are instructed in the psychological trauma they might experience if involved in a shooting. Officers learn, for example, they may experience feelings of guilt over shooting another human being, even if the shooting is justified. The officer must understand such a traumatic event might affect him; therefore, it would logically follow that the officer would, at the very least, have an awareness of what might follow psychologically from such an event. In other words, if an officer is aware from the beginning that it is normal to experience guilt or other emotions, when those feelings arise after an incident, the officer may be better prepared to deal with them.

Everly and Mitchell also note that much trauma results from unrealistic expectations. Setting realistic expectations and making officers aware of them might protect the officers from somehow feeling their assumptions have been violated.¹⁵⁷ The argument here is that if the officer is aware of how this trauma may affect him, he is better

¹⁵⁵ National Child Traumatic Stress Network, “About PFA.”

¹⁵⁶ Everly and Mitchell, “The Debriefing ‘Controversy,’” 213.

¹⁵⁷ Everly and Mitchell, 211.

equipped to manage it. Finally, the authors claim that “behavioral response preparation and rehearsal” are an essential part of pre-incident preparation, and this includes stress resistance training, common stressor recognition, and stress management education.¹⁵⁸

EAPs, which encompass peer support groups such as those belonging to the NYPD and DEA, use preventative tools to help build resilience and reduce stress in the workplace. Such assistance usually comes in the form of training, programs, and seminars designed to improve an employee’s abilities to cope and manage reactions to stressors. Some of these programs offer stress management techniques such as relaxation and breathing exercises and other ways to manage stress. Many of these mindfulness techniques could be applied more rigorously to law enforcement.

For example, in the DEA, all new employees undergo training and exposure to EAP. This training is not simply a one-time event but it continues throughout the course of one’s career. As a DEA TTM, this author periodically provided training and updates about EAP to all employees regardless of their seniority in the agency. It was important to remind employees that if they became overwhelmed or stressed, there was a mechanism to help manage this stress. One of the preventative aspects of EAP training was exposing employees to tactics they could use to identify when they were feeling stressed and providing them with the ability to manage their stress. To that end, the DEA hired an expert in the use of breathing techniques to control stress (this preventative technique is discussed further in Chapter IV).

To summarize, many police organizations have tools and approaches to build resilience and help officers deal with stress. The model used by the SDPD, for example, incorporates many of these tools. However, these prophylactic approaches should be emphasized and better incorporate stress-reduction techniques used widely in other disciplines. These approaches, which include mindfulness techniques, may be helpful in reducing critical incident stress and psychological trauma. Other physiological symptoms associated with increased stress affect the body. Controlling how the body reacts to stress requires harnessing the power of the mind.

¹⁵⁸ Everly and Mitchell, 213.

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IV. APPLICATION OF TOOLS TO BUILD RESILIENCE

This chapter focuses on various preventative tools, techniques, and procedures that are used to reduce stress and build resilience. Some of these tools and tactics, known generally as mindfulness training, harness the mind and body to control stress. Mindfulness techniques include the use of controlled breathing exercises, meditation, yoga, visualization, and guided imagery.¹⁵⁹ This chapter also discusses the use of biofeedback to monitor stress, highlighting how using biofeedback is vital to an officer's well-being. Even though these techniques are used in many walks of life, the analysis addresses their potential applicability to law enforcement. Finally, this chapter describes how agencies can incorporate these techniques into training, both from the beginning and throughout officers' careers.

A. MINDFULNESS

Several different definitions of mindfulness exist, and this variety becomes problematic in determining whether incorporating mindfulness techniques into the framework of stress reduction and resilience-building programs for law enforcement is worthwhile. Mindfulness is defined by Jon Kabat-Zinn, a scholar renowned for his work in this area, as "paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally."¹⁶⁰ In other words, it is being present in the moment or, as defined by the Greater Good Science Center at Berkeley, "maintaining a moment-by-moment awareness of our thoughts, feelings, bodily sensations, and surrounding environment through a gentle, nurturing lens."¹⁶¹ Ronald Siegel, assistant psychology professor at

¹⁵⁹ Michael S. Christopher et al., "A Pilot Study Evaluating the Effectiveness of a Mindfulness-Based Intervention on Cortisol Awakening Response and Health Outcomes among Law Enforcement Officers," *Journal of Police and Criminal Psychology* 31, no. 1 (2016): 17, <https://doi.org/10.1007/s11896-015-9161-x>.

¹⁶⁰ Jon Kabat-Zinn, *Wherever You Go, There You Are: Mindful Meditation in Everyday Life* (Hoboken, NJ: Hyperion, 1994), 14.

¹⁶¹ "Mindfulness Defined: What Is Mindfulness?," Greater Good Science Center, accessed September 4, 2019, <https://greatergood.berkeley.edu/topic/mindfulness/definition>.

Harvard Medical School, defines mindfulness as “the practice of purposely focusing your attention on the present moment—and accepting it without judgment.”¹⁶² Siegel continues:

It [mindfulness] is intended to help us come to a healthy relationship with the inevitabilities of the difficulties of life, which is much more profound than relaxation training. These practices are designed to train the brain and the mind to embrace life as it actually is. When we can do that, we wind up being much less stressed. Ultimately, most of our stress comes from fighting reality.¹⁶³

Mindfulness includes the use of controlled breathing, meditation, yoga, and visualization and guided imagery, all of which are defined and discussed in this chapter (see Table 3 for a summary of definitions). For now, this introductory section discusses the origins of mindfulness.

¹⁶² “Breath Meditation: A Great Way to Relieve Stress,” Harvard Health Publishing, April 2014, <https://www.health.harvard.edu/mind-and-mood/breath-meditation-a-great-way-to-relieve-stress>.

¹⁶³ Harvard Health Publishing.

Table 3. Definitions of Mindfulness¹⁶⁴

| Study | Definition |
|----------------|--|
| Bishop et al. | “A process of regulating attention in order to bring a quality of nonelaborative awareness to current experience and a quality of relating to one’s experience within an orientation of curiosity, experiential openness, and acceptance.” ¹⁶⁵ |
| Shapiro et al. | Three areas of mindfulness are thinking purposefully, being attentive, and doing so in a specific way. “Intention, attention, and attitude are not separate processes or stages—they are interwoven aspects of a single cyclic process and occur simultaneously.” ¹⁶⁶ |
| Szalavitz | “The awareness that arises through paying attention on purpose in the present moment—non-judgmentally.” ¹⁶⁷ |
| Brown and Ryan | Being attentive and aware of what is presently occurring. ¹⁶⁸ |
| Jha et al. | “Mindfulness is a mental mode characterized by full attention to present-moment experience without judgment, elaboration, or emotional reactivity.” ¹⁶⁹ |

According to Kabat-Zinn, mindfulness is rooted in Buddhism, specifically meditation. Around 1979, Kabat-Zinn took mindfulness from its religious domain and

¹⁶⁴ Adapted from Patricia A. Deuster and Eric Schoomaker, “Mindfulness: A Fundamental Skill for Performance Sustainment and Enhancement,” *Journal of Special Operations Medicine* 15, no. 1 (2015): 94.

¹⁶⁵ Scott R. Bishop et al., “Mindfulness: A Proposed Operational Definition,” *Clinical Psychology: Science and Practice* 11, no. 3 (2004): 234, <https://doi.org/10.1093/clipsy.bph077>

¹⁶⁶ Shauna L. Shapiro et al., “Mechanisms of Mindfulness,” *Journal of Clinical Psychology* 62, no. 3 (March 2006): 375, <https://doi.org/10.1002/jclp.20237>.

¹⁶⁷ Maia Szalavitz, “Q&A: Jon Kabat-Zinn Talks about Bringing Mindfulness Meditation to Medicine,” *Time*, January 11, 2012, <https://healthland.time.com/2012/01/11/mind-reading-jon-kabat-zinn-talks-about-bringing-mindfulness-meditation-to-medicine/>.

¹⁶⁸ Kirk Warren Brown and Richard M. Ryan, “The Benefits of Being Present: Mindfulness and Its Role in Psychological Well-Being,” *Journal of Personality and Social Psychology* 84, no. 4 (April 2003): 822–48.

¹⁶⁹ Amishi P. Jha et al., “Examining the Protective Effects of Mindfulness Training on Working Memory Capacity and Affective Experience,” *Emotion* 10, no. 1 (2010): 54, <https://doi.org/10.1037/a0018438>.

brought it to the secular world as part of his mindfulness-based stress reduction (MBSR) program, one of the most scientifically studied mindfulness programs.¹⁷⁰ In a *Prison Journal* article about the effects of MBSR in correctional facilities, Kabat-Zinn and others explain mindfulness as “a sustained nonreactive attention to one’s ongoing mental contents and processes,” which include physical sensations, thoughts, and imagery.¹⁷¹ Kabat-Zinn asserts here that regular meditation has been shown to help individuals “cultivate deep and long-lasting experiences of inner calm, well-being, self-worth, and self-respect.”¹⁷² In other words, if individuals can use meditation-based techniques to deal with stress, they are empowered to control stress themselves, without outside (or unhealthy) intervention. The rationale is that if people can use these mindfulness techniques to manage stress, they are less likely to turn to other behaviors, such as abusing alcohol or chemical substances. Essentially, the ability to conquer stress is under each person’s direct control, and once we learn to master this technique, stress and the intense negative feelings that accompany it are no longer a threat to overwhelm us.

According to the *Journal of American Medicine*, MBSR is offered formally through an eight-week curriculum, and evidence suggests the use of this program decreases burnout and stress and enhances performance in many high-stress occupations.¹⁷³ MBSR usually takes place in a clinical setting, and over the eight weeks, participants in these sessions are trained in two types of meditation: body-scan meditation and sitting meditation. Stanford University Medicine’s website describes body-scan meditation, which focuses attention on the physical sensation in the body by “scanning” our awareness throughout the body. This process is done through a guided meditation sequence that urges each participant to notice what he is experiencing in every part of the body. The idea is to guide the participant “to

¹⁷⁰ Greater Good Science Center, “Mindfulness Defined.”

¹⁷¹ Marlene Samuelson et al., “Mindfulness-Based Stress Reduction in Massachusetts Correctional Facilities,” *Prison Journal* 87, no. 2 (June 2007): 255, <https://doi.org/10.1177/0032885507303753>.

¹⁷² Samuelson et al., 255.

¹⁷³ Carter C. Lebares et al., “Feasibility of Formal Mindfulness-Based Stress-Resilience Training among Surgery Interns,” *JAMA Surgery* 153, no. 10 (October 2018): 1, <https://doi.org/10.1001/jamasurg.2018.2734>.

learn self-awareness about how physical experience is tied to emotional experience.”¹⁷⁴ This scan enables the participant to respond better to emotional or physical cues by noticing how emotions affect the mind and body. Kabat-Zinn describes sitting meditation as choosing a comfortable seated posture, and like body-scan meditation, the participant begins the work of self-observation. This process involves becoming peaceful and relaxed and training the mind to be more stable and less reactive.¹⁷⁵

B. BREATHING

The respiratory system helps us breathe automatically, a process that involves the involuntary, unconscious actions of inhaling and exhaling. During this process, the lungs deliver oxygen and remove carbon dioxide from the blood.¹⁷⁶ Breathing is an essential physical process for our bodies, but breathing can also settle our nerves and calm us down. When we are relaxed, we feel in control, and breathing exercises can make our bodies feel more relaxed. The action of breathing deeply signals our minds to relax, which is an excellent way to lower stress. When we feel stressed, we experience an accelerated heart rate, our breathing quickens, and our blood pressure rises; these all decrease when we breathe deeply to relax.¹⁷⁷ But this slowing down does not just happen organically and automatically; one must recognize the feeling of stress and make a conscious effort to bring it under control through the use of learned and practiced breathing techniques. Though breathing is an automatic reflex, one may not simply just breathe and see the stress level diminish. One must first learn what breathing techniques are and how they control stress, and then practice these techniques. Only after learning and mastering these techniques does one experience a drop in stress levels.

As discussed in Chapter II, the HPA axis controls the SNS—our fight-or-flight response—and the PNS—the regulatory system that tells the body to slow down. The

¹⁷⁴ John Rettger, “Body Scan Meditation,” Stanford Medicine, accessed September 28, 2019, <https://mindful.stanford.edu/additional-resources/self-care/body-scan-meditation/>.

¹⁷⁵ Jon Kabat-Zinn, *Full Catastrophe Living* (New York: Bantam Books, 1990).

¹⁷⁶ “How the Lungs Work,” National Heart, Lung, and Blood Institute, last modified September 24, 2019, <https://www.nhlbi.nih.gov/health-topics/how-lungs-work>.

¹⁷⁷ Healthwise Staff, “Stress Management.”

controlled breathing in regular yoga practice could reduce the body's SNS and stimulate the PNS, leading to the lowering of one's blood pressure and heart rate, suggests Johnathan Greenberg, a postdoctoral research fellow in Massachusetts General Hospital's psychiatry department.¹⁷⁸ In other words, the brain can take cues from the body, and if the body is calming down physiologically, it can signal the brain to do so as well. What we are seeking to find through controlled breathing and mindfulness techniques is a balance of the two systems. Amy Wheeler, a professor at California State University–San Bernardino who sits on the International Association of Yoga Therapists' board of directors, says, "What yoga can teach you is to use your SNS when you need it for clarity, alertness and focus without going into the fight-or-flight response. The ultimate goal of yoga is to be calm and alert."¹⁷⁹ In other words, what Wheeler asserts is that yoga and the breathing involved in its practice can moderate the SNS response somewhat, so the body does not go into a full-fledged fight-or-flight response yet remains alert.

Sang Hwan Kim and colleagues conducted a review of studies that examined the effects of mindfulness techniques in reducing stress, specifically in those suffering from PTSD. This review noted that in 2010, almost 40 percent of people afflicted with PTSD used mindfulness techniques, including deep breathing exercise, and some evidence supports the use of these techniques to manage stress-related sickness.¹⁸⁰ The authors note that stress induced over-activity in the SNS, and individuals who used mindfulness techniques, such as controlled breathing, might reduce stress-related symptoms by increasing PNS activity.¹⁸¹ Kim's review of the literature supports mindfulness practices as an effective therapy for stress reduction

Breathing exercises are used for relaxation and stress management. The Department of Veterans Affairs asserts that deep breathing can help a person relax, and

¹⁷⁸ Jessica Migala, "This Is Your Brain on Yoga," NBC News, August 22, 2017, <https://www.nbcnews.com/better/health/what-yoga-does-your-brain-ncna794531>.

¹⁷⁹ Migala.

¹⁸⁰ Sang Hwan Kim et al., "Mind-Body Practices for Posttraumatic Stress Disorder," *Journal of Investigative Medicine* 61, no. 5 (June 2013): 827, <http://dx.doi.org/10.2310/JIM.0b013e3182906862>.

¹⁸¹ Kim et al., 827.

these techniques are helpful not only for those managing daily stressors but also for anyone who has experienced traumatic events; for those affected by PTSD, deep breathing can help manage anxiety and panic symptoms.¹⁸² When we are feeling stressed, we can take notice of this and employ breathing techniques. One of the most effective breathing exercises involves “belly breathing,” also known as diaphragmatic or abdominal breathing. According to noted breathing expert Belisa Vranich, “Belly breathing is marked by expansion of the abdomen rather than the chest, and encourages full oxygen exchange. By contracting the diaphragm, a muscle located horizontally between the chest cavity and stomach cavity, air enters the lungs and the belly.”¹⁸³ Engaging in belly breathing involves sitting or lying in a comfortable position, placing one hand on the chest, the other on your belly, and inhaling through the nose, allowing the belly to push one’s hand out. Exhaling through pursed lips as though whistling, one pushes the air out, feeling the hand on one’s belly move inward.¹⁸⁴ See Figure 2 for the position of the hands and the action of the stomach in belly breathing.

¹⁸² “Relaxation Exercise: Deep Breathing,” Department of Veterans Affairs, last modified September 2, 2015, https://www.va.gov/vetsinworkplace/docs/em_eap_exercise_breathing.asp.

¹⁸³ Belisa Vranich, *Breathe* (New York: Breathing Class Press, 2014), 104.

¹⁸⁴ Healthwise Staff, “Stress Management.”

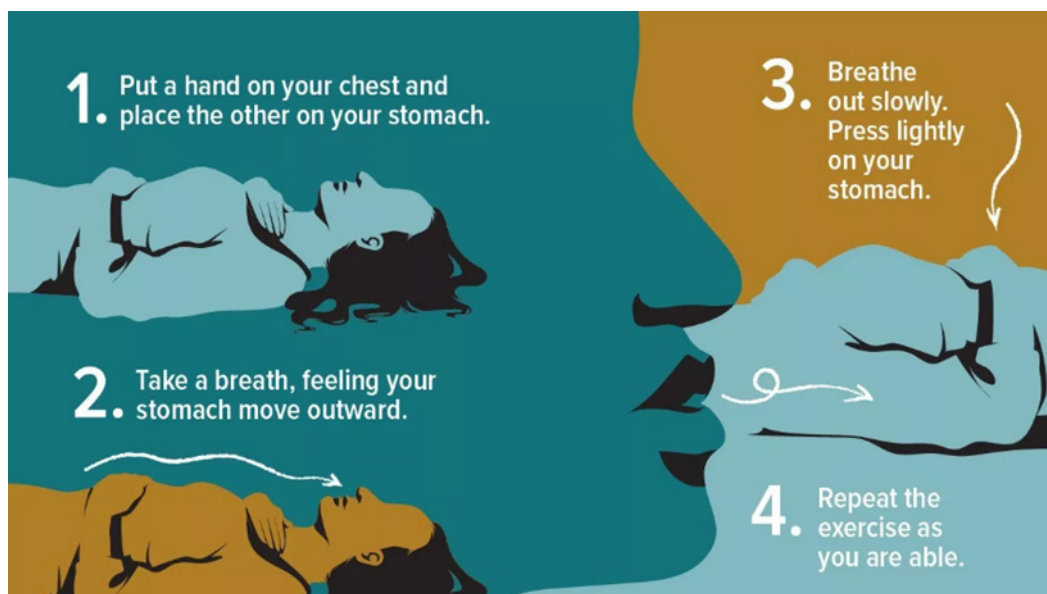


Figure 2. Belly Breathing¹⁸⁵

Controlled breathing that enables the nervous system to meet physical or mental demands is an effective way to conquer stress. For example, the use of breathing techniques involved with exercises such as yoga and Pilates has been known to reduce stress. Joseph Pilates founded this exercise in 1920, emphasizing “control of body position and movement,” concentration, centering, and breathing, defined as “moving air into and out of lungs in coordination with exercise.”¹⁸⁶ A study by Wells, Kolt, and Bialocerkowski examined over 100 peer-reviewed papers regarding the use of Pilates exercise for those suffering from lower back pain. The authors determined that while traditional Pilates principles such as centering, control, and concentration were mentioned in the literature 18–21 percent of the time, breathing (another traditional Pilates principle) was mentioned in 49–69 percent of the papers.¹⁸⁷ This research may suggest that breathing is the most important aspect of the traditional components of Pilates exercise.

¹⁸⁵ Source: “Breathing Exercises for COPD,” Healthline, accessed October 10, 2019, <https://www.healthline.com/health/copd/breathing-exercises>.

¹⁸⁶ Cherie Wells, Gregory S. Kolt, and Andrea Bialocerkowski, “Defining Pilates Exercise: A Systematic Review,” *Complementary Therapies in Medicine* 20, no. 4 (August 2012): 254, <http://dx.doi.org/10.1016/j.ctim.2012.02.005>.

¹⁸⁷ Wells, Kolt, and Bialocerkowski, 259.

An article about the benefits of Pilates exercise indicates that Pilates and yoga practices can relieve stress. Because both exercises involve controlling bodily movements and coordinating those movements with breathing, the physical demands of moving the body can be facilitated with controlled breathing. That is, though the body is being taxed through exercise, breathing steadily and remaining mindful help to maintain a sense of calm, allowing one to meet the challenges of physical stress.¹⁸⁸ Similarly, when the body is being physiologically taxed through stress, the use of practiced, calming breathing techniques can reduce stress. Breathing is an important aspect of meditation, which is discussed in the following section.

C. MEDITATION

Meditation has been around for thousands of years and is defined as “engaging in mental exercise (such as concentrating on one’s breathing or repeating a mantra) for the purpose of reaching a heightened level of spiritual awareness.”¹⁸⁹ It derives from the Latin word *meditatum*, which means to ponder, and is most commonly thought to be associated with Buddhism, whose teachings use meditation to achieve enlightenment or awakening.¹⁹⁰ Meditation is a part of mindfulness, which can bring a sense of peace and calm and benefit one’s overall health.

Meditation has been found to reduce depression, relieve anxiety, and reduce stress. According to the Mayo Clinic, meditation affects emotional well-being, and some benefits of meditation include building coping mechanisms to help manage stress, reducing negative emotions, and seeing stressful situations from a different perspective.¹⁹¹ It may seem hard to understand meditation, how something so simple as focusing attention and eliminating distraction could produce results. What is going on in one’s head, one’s inner

¹⁸⁸ “12 Scientifically Proven Benefits of Pilates for Your Peace of Mind,” Pilates Bridge, September 25, 2013, <https://pilatesbridge.com/12-scientifically-proven-benefits-of-pilates-for-your-peace-of-mind/>.

¹⁸⁹ *Merriam-Webster*, s.v. “meditate,” accessed October 11, 2019, <https://www.merriam-webster.com/dictionary/meditate>.

¹⁹⁰ “A Brief History of Meditation,” *Mindworks Meditation* (blog), July 7, 2018, <https://mindworks.org/blog/history-origins-of-meditation/>.

¹⁹¹ “Meditation: A Simple, Fast Way to Reduce Stress,” Mayo Clinic, September 18, 2019, <https://www.mayoclinic.org/tests-procedures/meditation/in-depth/meditation/art-20045858>.

dialogue, is a chief distraction. For many, just taking the first step in attempting to meditate is challenging and sometimes overwhelming, but the purpose of meditation is to acknowledge that inner dialogue—those thoughts running through one’s mind—and let it go. The thought of meditation might conjure up images of Buddhist monks wearing robes among other stereotypes, but anyone can practice it with substantial benefits.

Meditation can be simple, done anywhere, and can bring about change in one’s life. For example, ABC news anchor Dan Harris turned to meditation during a stressful time in his life. In 2003, Harris had been covering the wars in Iraq and Afghanistan and became depressed, which led to self-medication and drug use.¹⁹² A year later, he famously suffered a panic attack during a nationally televised newscast, which forced him to take stock of his life and get a handle on his stress and depression. He hesitantly tried meditation and admitted he was a “fidgety skeptic” of the practice but, after learning the practice, found benefits to tame that inner dialogue.¹⁹³ Harris’s account acknowledges that internal narrator that speaks all the time and comments on and critiques our thoughts and actions. For example, one might think—that is, tell oneself—“This task is challenging, I don’t know if I can successfully complete it, and it is causing me some anxiety.” Here is another: “Should I really be eating this doughnut? It’s bad for me and could bring health problems.” This inner dialogue observes and comments on our world and how we are doing in it. Many people find themselves engaging in this negative self-talk and, in doing so, limit their ability to believe in themselves or make positive changes in their lives. Harris found that listening to this inner dialogue was stressful and depressing him, so he turned to meditation to help change his inner dialogue from negative words to positive ones.¹⁹⁴ Harris admits that meditation did not magically solve all of his problems, but it did reduce stress and build resilience.

Many types of mindfulness techniques, such as deep-breathing techniques, share meditative properties, but meditation takes different forms. Guided imagery or

¹⁹² Dan Harris, “How an On-Air Panic Attack Improved My Life,” ABC News, February 11, 2014, <https://abcnews.go.com/Health/dan-harris-air-panic-attack-improved-life/story?id=22469789>.

¹⁹³ Harris.

¹⁹⁴ Harris.

visualization involves forming a mental image of a relaxing place or situation (this specific aspect of mindfulness is discussed later in this chapter). Another is mantra meditation, where one silently repeats a word or phrase to help push distracting thoughts from the mind.¹⁹⁵ A third type is known as mindfulness meditation, which involves having an increased sense of awareness and living in the present moment. This type of meditation can be done by following three steps:

1. Sit or lie in a comfortable position in a quiet setting
2. Focus attention on breathing, feeling your breath coming in and going out
3. Once the mind begins to wander, bring your attention back to the breaths¹⁹⁶

The key to this type of meditation is to recognize that the mind wanders, and when it does, those thoughts should pass without judgment through the mind. Nevertheless, meditation involves catching one's wandering mind and bringing it back to breathing.¹⁹⁷ Mindfulness techniques, including meditation, have an effect not only on our brains but also on our physiology at a cellular level.

Many mindfulness techniques, including meditation, have been recognized by health professionals as stress reducing, and they physically change our bodies at the molecular level. A 2016 study by Ivana Buric et al. examined the molecular signature of mindfulness techniques and observed genetic changes associated with meditation and related techniques.¹⁹⁸ The researchers hypothesized that these mindfulness techniques “reverse expression of genes involved in inflammatory reactions that are induced by stress.”¹⁹⁹ Conclusions drawn from this study indicate the use of mindfulness techniques such as meditation may downregulate certain genes related to stress, that is, they reverse

¹⁹⁵ Mayo Clinic, “Meditation.”

¹⁹⁶ Mayo Clinic.

¹⁹⁷ “How to Meditate for Beginners,” Ten Percent Happier, accessed October 11, 2019, <https://www.tenpercent.com/how-to-meditate>.

¹⁹⁸ Ivana Buric et al., “What Is the Molecular Signature of Mind–Body Interventions? A Systematic Review of Gene Expression Changes Induced by Meditation and Related Practices,” *Frontiers in Immunology* 8 (June 2017): 14, <https://doi.org/10.3389/fimmu.2017.00670>.

¹⁹⁹ Buric et al., 1.

“the molecular signature of the effects of chronic stress.”²⁰⁰ In other words, research supports some of the physical and psychological benefits of mindfulness techniques including changes at the molecular level.

D. YOGA

Thousands of years ago yoga originated in India, and the term derives from the Sanskrit root “yul,” which means to join, yoke, or unite, according to Ishwar V. Basavaraddi, director of the Morarji Desai National Institute of Yoga in India.²⁰¹ According to ancient yogic writings, yoga “leads to the union of individual consciousness with that of the Universal Consciousness, indicating a perfect harmony between the mind and body, Man and Nature.”²⁰² A person who has mastered yoga, said to be a yogi, has achieved a self-realized state of freedom known as nirvana, and the idea of this state is to live with health and harmony.²⁰³ This practice of self-development involves forming and maintaining physical poses (called asanas), maintaining slow, controlled breaths while using meditation, mental imagery, and stretching to achieve the poses.²⁰⁴ Yoga is often seen as pathway to achieve balance between the mind and body and, as an exercise or therapy, does not necessarily lend itself to a particular belief system, community, or religion.

Different styles of yoga exist, all of which involve stretching the body as well as forming and holding different poses while maintaining slow, controlled breaths. Three chronicled here are hatha, vinyasa, and Bikram yoga. Hatha yoga, the most popular, general category of yoga, involves the practice of holding asanas (poses, or postures) combined

²⁰⁰ Buric et al., 14.

²⁰¹ Ishwar Basavaraddi, “Yoga: Its Origin, History and Development,” Indian Ministry of External Affairs, April 23, 2015, <https://www.mea.gov.in/in-focus-article.htm?25096/Yoga+Its+Origin+History+and+Development>.

²⁰² Basavaraddi.

²⁰³ Basavaraddi.

²⁰⁴ Elizabeth Scott, “The Benefits of Yoga for Stress Management,” Verywell Mind, January 16, 2020, <https://www.verywellmind.com/the-benefits-of-yoga-for-stress-management-3145205>.

with pranayama (breathing exercises); this is a relaxed, slow, gentle form of yoga.²⁰⁵ Vinyasa yoga is similar to hatha yoga but differs in that the movement into poses is synchronized with breaths, lending to a faster, more vigorous style of flowing yoga.²⁰⁶ Finally, Bikram yoga, named after its founder, Bikram Choudhury, is known as hot yoga. It consists of the same 26 poses with two breathing techniques, conducted in the same order over 90 minutes in a room where the temperature is set to 105 degrees Fahrenheit. The idea of this form of yoga is to sweat and flush toxins from the body and move deeply into the poses.²⁰⁷ Some forms of yoga, like Bikram, involve more aerobic exercise while others are slower and more relaxed, but all forms of yoga have similar benefits and the goal of achieving mind and body homeostasis. All involve pranayama, or controlled breathing.

Controlled breathing is an integral part of yoga, for both physical and psychological reasons. Basavaraddi states that pranayama “consists in developing awareness of one’s breathing followed by willful regulation of respiration as the functional or vital basis of one’s existence. It helps in developing awareness of one’s mind and helps to establish control over the mind.”²⁰⁸ In other words, breathing in yoga helps to develop a keen awareness of the air flowing in and out of the body through the nostrils and mouth. When breathing during yoga, one regulates the inhalation and exhalation, bringing attention to the filling and emptying of one’s body space. While concentrating on breathing, the mind becomes clear.

Yoga has clear mental and physical benefits. Johnathan Greenberg, a fellow in the Massachusetts General Hospital psychiatry department, cites “accumulating evidence” that yoga is good for the mind, health and the body, noting it has been used to treat insomnia, eating disorders, and anxiety.²⁰⁹ When we become anxious, the body secretes the stress hormone cortisol, but in a reverse process, evidence suggests that improving mood and

²⁰⁵ “14 Different Types of Yoga and Their Benefits to Your Health,” DoYogaWithMe, accessed February 22, 2020, <https://www.doyogawithme.com/types-of-yoga>.

²⁰⁶ DoYogaWithMe.

²⁰⁷ DoYogaWithMe.

²⁰⁸ Basavaraddi, “Yoga: Its Origin, History and Development.”

²⁰⁹ Migala, “This Is Your Brain on Yoga.”

emotions can help reduce cortisol, and some note this can be accomplished with yoga. This reduction in cortisol can help the body and mind to relax.

Some studies extol the benefits of mindfulness techniques and their effect on the body. In a 2016 study, which evaluated the effects of mindfulness practices on the body at the molecular level, Buric et al. discussed the practice of yoga and its benefits.²¹⁰ The researchers assert that stress can effect changes in the body's biology at the genetic level, specifically in how chronic stress causes cellular inflammation; though some short-term inflammation is normal, the cellular inflammation from chronic stress is detrimental "because it persists when there is no actual threat to the body."²¹¹ In one of the studies reviewed by Buric et al., yoga helped reduce inflammation in cancer patients, noting that it increased anti-inflammatory properties, thus affecting the HPA axis, enabling the body to better respond to cortisol, and more quickly stopping the stress response.²¹² Simply put, yoga helped to control cortisol, effectively lowering stress. Overall, the studies indicated there was a reduction of chronic stress, suggesting the use of mindfulness techniques may benefit physical and mental health.²¹³

E. GUIDED IMAGERY

Guided imagery can be used to reduce stress and achieve a more relaxed state. Guided imagery involves forming a rich mental picture of a serene setting; the goal is to link relaxed feelings with this mental picture so that those feelings are brought back during future sessions.²¹⁴ The MindTools website defines guided imagery as using "your imagination to picture a person, place, or time that makes you feel relaxed, peaceful and

²¹⁰ Buric et al., "What Is the Molecular Signature of Mind-Body Interventions?"

²¹¹ Buric et al., 2.

²¹² Buric et al., 9.

²¹³ Buric et al., 2.

²¹⁴ Harry Mills, Natalie Reiss, and Mark Dombeck, "Visualization and Guided Imagery Techniques for Stress Reduction," Gulf Bend Center, accessed January 17, 2020, https://www.gulfbend.org/poc/view_doc.php?type=doc&id=15672&cn=117.

happy. Imagery is slightly different from other stress management techniques, in that it relies on the use of all of your senses.”²¹⁵

In a report on stress management, Harvard University scholars assert that guided imagery can evoke a relaxation response, noting the participant chooses these images—scenes, experiences, or places—to improve mental health and foster calm.²¹⁶ Regarding this relaxation response, in the mid-1970s, Benson, Greenwood, and Klemchuk hypothesized that when our bodies are subject to continuous stress, these physiological changes can lead to diseases such as high blood pressure or other medical issues such as headaches; they contended that such diseases could be treated through the use of relaxation, which would lead to physiological changes to counter this stress reaction.²¹⁷

Achieving this relaxed state can help a person feel in control of their thought processes and emotions. For example, a person could imagine oneself in a relaxing, safe place, in whichever environment one feels most comfortable—for example, sitting on a comfortable couch or even lounging on a raft in a swimming pool. While going through this exercise, the person should choose an environment free from distractions and sit or lie quietly and peacefully. To begin, the person should take several calming breaths and close his eyes. While going through a guided imagery session, the leader gives directions to help the participant more easily achieve a calm state. This direction may include talking the participant through the exercise or using a downloaded audio recording.²¹⁸ In some cases, once the participant has undergone a few sessions, he or she may give the direction. For example, a directed suggestion might include the following:

Imagine lying on a comfortable raft in a swimming pool alone, smelling the freshly-cut grass, hearing the water lap at the side of the pool, and feeling a gentle breeze cool you or the sun warm your body. You may also feel the warm water touching parts of your body. Spend time noticing what all these

²¹⁵ “Guided Imagery: Mental Stress Management,” MindTools, accessed October 11, 2019, http://www.mindtools.com/pages/article/newTCS_04.htm.

²¹⁶ Gregory Fricchione, *Stress Management: Enhance Your Well-Being by Reducing Stress and Building Resilience* (Boston: Harvard Health Publications, 2016), 27, <http://public.eblib.com/choice/publicfullrecord.aspx?p=4833669>.

²¹⁷ Benson, Greenwood, and Klemchuk, “The Relaxation Response,” 87.

²¹⁸ Fricchione, *Stress Management*, 27.

sensations feel like, and feel that you are actually there, letting your body relax.²¹⁹

Some research on guided imagery suggests that its use may help reduce anxiety.²²⁰ A study conducted in 2018 investigated the efficacy of nature-based guided imagery (versus a traditional guided imagery session) in the reduction of anxiety; while both sessions reduced anxiety, the nature-based sessions were more effective at managing it.²²¹ This research demonstrates that the use of guided imagery may help reduce stress. The primary goal of guided imagery is not to pinpoint the exact source of stress but to reduce one's stress level and achieve a relaxation response, and this technique can be used anywhere as it relies purely on the participant's imagination.

F. VISUALIZATION

Visualization resembles guided imagery because the participant uses his imagination purposefully, but it differs slightly in that it focuses on a specific outcome, not a general goal of relaxing or managing stress. This practice does not involve guided direction and imagining a tranquil setting but provides participants with a task. According to a study on enhancing performance under stress, visualization involves “mentally rehearsing performance in anticipated stress situations [and] provides opportunities to mentally practice and prepare for certain performance elements even when live practice opportunities are not available or physical fatigue would otherwise impair performance.”²²² Thus, going over a task in one's mind and rehearsing it may help prepare one to perform better under stress.

Such visualization may also result in stress reduction, not because it takes the person mentally to a calm, peaceful place but because it provides the individual with a mental image of succeeding in a task. In law enforcement, for example, a source of stress

²¹⁹ Fricchione, 27.

²²⁰ Jessica Nguyen and Eric Brymer, “Nature-Based Guided Imagery as an Intervention for State Anxiety,” *Frontiers in Psychology* 9 (2018), <https://doi.org/10.3389/fpsyg.2018.01858>.

²²¹ Nguyen and Brymer.

²²² Sean Robson and Thomas Manacapilli, *Enhancing Performance under Stress: Stress Inoculation Training in Battlefield Airmen* (Santa Monica, CA: RAND Corporation, 2014), 23.

might be not successfully effecting an arrest, which could lead to an injured officer or even an injured suspect. If officers can visualize the steps needed to make an arrest, they are more likely to arrest a suspect safely. In other words, if officers can complete the task perfectly and successfully in their minds, when they are called to do it in an actual arrest situation, they will be more confident in their actions—because they have “been there before” if only in their minds.

One author who has written extensively on harnessing the power of the mind explains this concept. Terry Orlick, an expert in the area of sports performance and mental training, argues, “Positive performance imagery gives you an opportunity to be successful in your mental reality, even if you have not yet been fully successful in your physical reality.”²²³ By focusing on positive, performance-enhancing thoughts, one can prepare for any situation feeling as though he has been there before. Positive mental imagery can be coupled with positive self-talk, which might include these thoughts, provided by Orlick:

It’s no big surprise. There’s no reason to panic. I’ve prepared for this. I can handle it. I belong here. I choose to be here. I want to be here. There is no place I would rather be. I am ready for this. I am focused for this. I am confident that I can do what I want to do and have a personal-best performance! All I need to do is focus fully on the step in front of me, trust my focus, and let the good things unfold.²²⁴

Studies conducted in the sports world have indicated that the use of guided imagery may reduce anxiety and improve performance. One 2012 study involving collegiate golfers who used guided imagery held that confidence and performance both improved with the use of this technique, and the training appeared to be effective.²²⁵ A study published in the *Journal of Strength and Conditioning Research* investigated whether guided imagery—specifically to imagine muscle contractions—could improve strength; it found that guided imagery improved participants’ performance, especially with lower-body weight-lifting

²²³ Terry Orlick, *In Pursuit of Excellence*, 5th ed. (Champaign, IL: Human Kinetics, 2015), 113.

²²⁴ Orlick, 113.

²²⁵ Thomas Hammond et al., “The Effects of a Motivational General-Mastery Imagery Intervention on the Imagery Ability and Sport Confidence of Inter-Collegiate Golfers,” *Journal of Imagery Research in Sport and Physical Activity* 7, no. 1 (2012), <https://doi.org/10.1515/1932-0191.1066>.

exercises.²²⁶ If using guided imagery in athletics can help athletes perform better and reduce their anxiety, the use of this technique in law enforcement might be similarly effective.

The use of positive self-talk, paired with visualization, could help a person perform any required task better. In the case of law enforcement, an officer could visualize performing a task (e.g., making an arrest) and use positive self-talk, like Orlick's example, to improve the officer's chances of safely effecting an arrest.

G. BIOFEEDBACK

The aforementioned mindfulness techniques play a role in the reduction of stress, and biofeedback enhances these techniques in a process defined as follows: electronically monitoring automatically occurring body functions to train a person to better control those functions.²²⁷ When we move our legs to run or wave our hands, for instance, we consciously control these actions. Other bodily functions, such as our heart rate, blood pressure, and skin temperature, are involuntarily controlled by our nervous system—we do not even consider increasing our heart rate during exercise; it simply happens when we work out. As discussed previously, when under stress, our bodies undergo biological changes, which include quickening heart and breathing rates, a rise in blood pressure, and increased sweat. All these stress responses can be monitored, and we can receive immediate feedback to identify these physiological changes. Biofeedback therapy involves the use of these devices to receive and understand these vital data.

Such feedback can be applied to police work. Take the police officer who pulls a driver over for a traffic violation; as she approaches the stopped vehicle, the officer's heart races, her breathing speeds up, her palms become slightly sweaty, adrenaline pumps, and her vision tunnels slightly, focusing on the driver and any passengers who may pose a threat to her. These physiological changes in her body are designed to help her adapt to a

²²⁶ Florent Lebon, Christian Collet, and Aymeric Guillot, "Benefits of Motor Imagery Training on Muscle Strength," *Journal of Strength and Conditioning Research* 24, no. 6 (June 2010): 1680–87, <https://doi.org/10.1519/JSC.0b013e3181d8e936>.

²²⁷ Lexico Dictionary, s.v. "biofeedback," accessed October 12, 2019, <https://www.lexico.com/en/definition/biofeedback>.

potentially dangerous situation. Once the officer determines that neither the driver nor the passengers are a threat to her, she relaxes; however, the process takes a while before the body returns to homeostasis as it reacts to these changes with physical, mental, and emotional responses.²²⁸ Our bodies are designed to experience stress and react to it as part of our natural fight-or-flight response, and these physiological reactions are measurable.²²⁹

Measuring these physiological changes in a person's level of stress can provide feedback and reduce stress. For example, if an officer could identify that he was breathing harder and his heartrate had quickened, he might be able to grasp the amount of stress he was under. Gauging this stress would be difficult without the use of technology to make the officer aware of these physiological changes. Different devices are available to measure and provide feedback on the physiological conditions of law enforcement officers to monitor and reduce occupational stress. These commercially available technologies, such as clothing embedded with sensors, wrist-worn sensors (wearables), and smartphone applications, could be used as a form of biofeedback therapy for officers. Devices that measure and provide feedback on the physiological conditions of officers range from wrist-worn wearable technology (e.g., the Apple watch) and clothing with embedded sensors to smartphone applications that can be used to monitor and mitigate the stress an officer experiences.

Wearable devices monitor and record the user's heartrate using one of two methods: electrocardiography and photoplethysmography. The former shows how fast the heart beats and whether the rhythm is regular or irregular by measuring electrical impulses that pass through the heart.²³⁰ These impulses are measured through a series of electrodes attached to the skin, primarily the chest, legs, and arms; the electrodes feed this information back to a monitoring device.²³¹ An example of this technology is a heart rate monitor that uses a chest strap with embedded sensors to pick up these electrical impulses and send

²²⁸ Cleveland Clinic, "What Is Stress?"

²²⁹ Cleveland Clinic.

²³⁰ "Electrocardiogram," National Heart, Lung, and Blood Institute, accessed October 28, 2019, <https://www.nhlbi.nih.gov/health-topics/electrocardiogram>.

²³¹ National Heart, Lung, and Blood Institute.

them to a wrist-worn monitor. The second way these devices measure the heartrate is through photoplethysmography, the process of using light to measure blood flow. These watches have small light-emitting diodes on their undersides that shine green light onto the skin of the wrist. According to Valentina Palladino, a writer for Ars Technica,

the different wavelengths of light from these optical emitters interact differently with the blood flowing through the wrist. When that light refracts (or reflects) off the flowing blood, another sensor in the watch captures that information. That data can then be processed, along with motion information detected by the device's accelerometer, with algorithms to produce understandable pulse readings.²³²

This type of technology can also measure skin temperature and is more common and user-friendly as it does not require a chest strap. But the heartrate and skin temperature are not the only physiological elements officers need to be cognizant of while on patrol and anticipating stressful events.

While smartwatches are seemingly everywhere, clothing with sensors embedded in the fabric are less universal but growing in popularity. In 2005, a wearable health monitoring system based on integrated sensors in fabric came on the scene. According to a journal article about wearable technologies, a health monitoring system known as WEALTHY involves fabric sensors with imbedded electrodes, which allow the garment to read and record changes in the body's physiology during physical activities.²³³ Temperature, respiration, and electrocardiogram activity can be monitored. A miniaturized short-range wireless system embedded in the clothing transfers signals to a receiver on a smartphone.²³⁴ This cost-effective system is designed to allow the wearer to be more conscious of physiological conditions of "extreme environmental or stressful conditions."²³⁵ A similar system is being marketed to law enforcement.

²³² Valentina Palladino, "How Wearable Heart-Rate Monitors Work, and Which Is Best for You," Ars Technica, April 2, 2017, <https://arstechnica.com/gadgets/2017/04/how-wearable-heart-rate-monitors-work-and-which-is-best-for-you/>.

²³³ Rita Paradiso, Giannicola Loriga, and Nicola Taccini, "A Wearable Health Care System Based on Knitted Integrated Sensors," *IEEE Transactions on Information Technology in Biomedicine* 9, no. 3 (September 2005): 337, <https://doi.org/10.1109/TITB.2005.854512>.

²³⁴ Paradiso, Loriga, and Taccini, 337.

²³⁵ Paradiso, Loriga, and Taccini, 338.

Hexoskin, a Canadian company, has been selling cutting-edge smart clothing with body sensors in the garments since 2012. The clothing can measure the heartrate, breathing rate, and activity intensity. In a 2017 article on its website, Hexoskin acknowledged the stress that first responders experience, citing the more than 20 percent of first responders who face PTSD.²³⁶ Like other wearable technologies, Hexoskin garments provide physiological data, giving access to a person's vital signs in real time to help determine stress levels. The clothing transmits data to a remote dashboard that helps monitor focus, stress, and fatigue. Hexoskin has partnered with law enforcement agencies, such as the Dubai Police Department in 2015, and the DHS Science and Technology Division and Grant County, Washington, Sheriff's Office in 2017 to test and evaluate their product.²³⁷

Finally, beds are equipped with sensors that monitor the physiology of the body while at rest. These biofeedback beds are being used in holistic therapy sessions for many suffering from anxiety, stress, and related problems such as poor breathing patterns, as well as those suffering from addiction.²³⁸ Biosound Healing Therapy is a company that uses one such bed in its stress-reduction therapy. The participant lies on the bed, which monitors heart and respiration rates, while a television screen shows tranquil scenes and therapeutic music flows via noise-cancelling headphones.²³⁹ The combination of music, guided imagery from the television, and a synchronized vibrational massage from transducers imbedded in the fabric of the bed help to reduce anxiety.²⁴⁰ While the company touts this type of therapy as beneficial in its peer-reviewed studies, more rigorous academic research is necessary to determine its efficacy.

²³⁶ "Officers and First Responders Monitor Stress for Health Prevention," Hexoskin, August 16, 2017, <https://www.hexoskin.com/blogs/news/monitor-vitals-with-hexoskin-to-determine-prevention-solutions>.

²³⁷ "Department of Homeland Security and Grant County Sheriff's Office Test New Technologies for First Responders," Hexoskin, June 9, 2017, <https://www.hexoskin.com/blogs/news/department-of-homeland-security-grant-county-sheriffs-office-test-new-technologies-for-first-responders>.

²³⁸ "Biofeedback Bed Now at Silvermist!," *Silvermist* (blog), March 18, 2016, <https://www.silvermistrecovery.com/blog/2016/march/biofeedback-bed-now-at-silvermist/>.

²³⁹ "Healing Therapy, Addiction Treatment, Holistic Pain Management," Biosound Healing, accessed October 28, 2019, <https://biosoundhealing.com/>.

²⁴⁰ Biosound Healing.

Measuring, monitoring, recording, and analyzing officers' physiological changes could prove useful in determining how officers manage stress over time, but such measurements could also be used to gauge stressful law enforcement encounters. Using biofeedback and other scientific methods from 2010–2012, researchers conducted a study about resting heart rate and the risk of violent encounters among law enforcement officers, the first of its kind in the United States. The purpose of the University of South Florida's study was to determine whether a link exists between the resting heart rate of an officer and engagement in violent behavior, specifically during resisting-arrest scenarios.²⁴¹ Findings suggest that officers with higher resting heart rates find themselves at a higher risk of becoming involved in fights with suspects during arrests.²⁴² Furthermore, the study suggests those officers with lower resting heart rates might be less apt to respond physically during stressful situations, which may lead to the officers making better decisions.²⁴³ Finally, and central to this thesis, the study concludes that there may be benefits to using evidence-based programs to reduce stress, and these programs include mindfulness and yoga; the authors cite studies that extol the benefits of these programs for the general public and for military personnel.²⁴⁴ If these programs are beneficial for the military and the public in general, they could be beneficial for the law enforcement community.

H. PRACTICAL APPLICATIONS OF MINDFULNESS

Mindfulness techniques, such as breathing, positive self-talk, and mental imagery, have been effective in helping people cope with anxiety and stress and improving performance in emergency medicine. An article by Michael Lauria et al. about the use of mindfulness techniques to improve performance in emergency care workers demonstrated

²⁴¹ Bryanna Fox, Lauren N. Miley, and Richard K. Moule, "Resting Heart Rate and Risk of Violent Encounters during Arrest in a Sample of Law Enforcement Officers," *Journal of Criminal Psychology* 8, no. 4 (2018): 265–86, <http://dx.doi.org/10.1108/JCP-05-2018-0024>.

²⁴² Fox, Miley, and Moule, 280.

²⁴³ Fox, Miley, and Moule, 280.

²⁴⁴ Fox, Miley, and Moule, 288.

the efficacy of these skills.²⁴⁵ Like first responders and police officers, those in emergency medicine have stressful jobs.²⁴⁶ The job of emergency care providers resembles that of police officers in that both occupations involve managing life-threatening crises in which the practitioners must perform at a high level under stress. Both must critically assess a situation then act, knowing that inaction (or the wrong action) may have serious consequences. Another similarity to police workers is that emergency care providers often must perform their duties and make decisions with incomplete information, which can increase stress.²⁴⁷ Because of these similarities, observing how emergency medical care providers control an emergent situation and mitigate stress might be helpful to law enforcement.

The article describes four particular “performance-enhancing psychological skills”: breathing, talking, seeing, and focusing.²⁴⁸ Lauria et al. contend that these skills differ slightly from traditional mindfulness techniques in that they are used to improve performance “just before or in moments of high stress.”²⁴⁹ Further, they have developed a mnemonic device to recall these techniques: “Beat the Stress, fool!” (see Figure 3).²⁵⁰

²⁴⁵ Michael J. Lauria et al., “Psychological Skills to Improve Emergency Care Providers’ Performance under Stress,” *Annals of Emergency Medicine* 70, no. 6 (December 2017): 885, <https://doi.org/10.1016/j.annemergmed.2017.03.018>.

²⁴⁶ Lauria et al., 884.

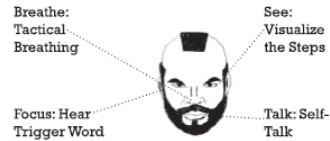
²⁴⁷ Lauria et al., 888.

²⁴⁸ Lauria et al., 884.

²⁴⁹ Lauria et al., 885.

²⁵⁰ Lauria et al., 885.

**Beat the
Stress
Fool!**



B - Breathe
T - Talk (Self)
S - See (Mental Rehearsal)
F - Focus with Trigger Word

Figure 3. Mnemonic Device to Use in Times of High Stress²⁵¹

The article notes that using deep breathing exercises may help emergency care workers; breathing techniques are used to help high-performing athletes control their arousal and reduce anxiety, something that is necessary to perform under stress.²⁵² Likewise, Lauria et al. recommend using a form of tactical breathing, which involves diaphragmatic breathing and forcing the person to be aware of one's breaths:

The technique involves breathing in deeply for 4 seconds, engaging the diaphragm, and attempting to pull the breath down into the abdomen. Then the breath is held for 4 seconds and exhaled slowly during 4 seconds, after which the lungs are kept empty for 4 seconds.²⁵³

The second tactic involves positive self-talk, similar to the visualization example given by Orlick when he addressed the performance of athletes. According to the article, some psychologists note that positive self-talk is "the key to cognitive control," and research suggests self-talk can improve a person's perceived ability to complete a task.²⁵⁴ More simply put, if a person believes he can perform a task and fills his mind with positive thoughts on how to do so, he will be successful. Guidelines for self-talk consist of the following: use short, specific phrases; speak in first-person, present tense; use positive phrases; recite the phrase to yourself with intention; speak in a kind voice; and repeat the

²⁵¹ Source: Lauria et al., 885.

²⁵² Lauria et al., 885.

²⁵³ Lauria et al., 886.

²⁵⁴ Lauria et al., 886.

phrase often.²⁵⁵ These positive self-talk statements may improve confidence during a stressful event.

The third tactic is visualization and mental imagery practice, essentially permitting the person to see the steps of the procedure to be taken. In mentally rehearsing these steps, this practice maps the neurological pathways in the brain to prepare the person when it comes time to complete the task. This approach is like a procedure used in law enforcement called “crisis rehearsal”—because life-threatening events do not appear frequently, the theory is to rehearse what to do when faced with a critical situation.²⁵⁶

The fourth tactic is focus, wherein the person conjures a trigger word to keep focused. The authors use the example of the “cognitive spotlight,” explaining that our attention is akin to a light illuminating a certain part of a problem whereby information outside the spotlight is ignored.²⁵⁷ The idea of a trigger or cue word is that it permits the practitioner to focus more keenly on the procedure.

These tactics used in emergency medicine apply to the law enforcement world because it faces similar stressors. In the police world, officers could (and should) use this model when anticipating or becoming involved in a stressful encounter. For example, when responding to a domestic dispute—a common, stressful service call often resulting in a confrontation—an officer might use controlled breathing tactics to calm himself before arriving on scene. The officer could employ positive self-talk (“I can handle this call”) and visualize employing the tactics he might need to make an arrest. Finally, the officer could employ the use of a cue or trigger word to refocus his attention to the task at hand.

I. APPLICABILITY TO LAW ENFORCEMENT

Many of the techniques to mitigate stress have shown positive results in other occupations, and those techniques have applicability to the law enforcement realm. Yoga was used to train warriors hundreds of years ago. Yoga scholar and author Mark Singleton

²⁵⁵ Lauria et al., 886.

²⁵⁶ Lauria et al., 887.

²⁵⁷ Lauria et al., 888.

describes the link between yoga and warriors from the 17th century: “Yogis engaged in exercise regimes designed to inure their bodies to the harsh physical conditions of the itinerant life and prepare them for combat.”²⁵⁸

In 2013, after being inspired by working with military personnel, yoga instructor Olivia Kvtine Mead founded Yoga for First Responders (YFFR).²⁵⁹ Mead realized that many yoga programs existed to help military personnel recover *after* their tours of duty, and she observed the need for a similar stress-reduction program to help first responders *before* their careers ended. She reviewed the training she had provided to returning military personnel and developed a program tailored to first responders. She observed a need for preventative care for first responders instead of the usual assistance after the fact.

Providing a stress-reduction program after a police officer retires mimics closing the barn door after the horses have run out. Police officers need a preventative, non-reactive stress-reduction program. To emphasize this point, Mead noted that many military programs focused on providing care after the tour of duty, which suited those returning from combat. But a soldier returning from a one-year combat tour is different from a police officer enduring an entire career. Mead observed, “They [first responders] are in their jobs for 30 years until they retire. They go to work and see trauma, death, destruction, loss and the worst part of humanity, then they have to go home and be a mother or a father, a husband or a wife.”²⁶⁰ In other words, police officers deal with stressful situations on a near-daily basis over their careers, requiring preventative stress-reduction techniques, not just those that might be useful after a critical incident.

Mead argues that a missing component in the first responder’s training is the ability to handle stress and trauma and be able to process it, and without this critical skill (the ability to manage stress and trauma), first responders may experience burnout, alcoholism,

²⁵⁸ Mark Singleton, *Yoga Body: The Origins of Modern Posture Practice* (New York: Oxford University Press, 2010), 40.

²⁵⁹ “How a Yoga Teacher Is Saving First Responders across America from Depression—with Downward Dog,” Good News Network, January 26, 2019, <https://www.goodnewsnetwork.org/first-responders-yoga/>.

²⁶⁰ Good News Network.

divorce, and suicides.²⁶¹ In 2013, Mead began working with police and fire departments and has seen results, even with veteran officers and fire fighters. YFFR helps first responders build physical, mental, and emotional resilience to process the stress in an emergency services career.²⁶² In one example, a skeptical firefighter initially dismissed YFFR training, but he soon changed his mind and embraced the concept.²⁶³ According to Mead, this firefighter confided he had not been able to sleep through the night for a year after working a particularly harrowing car accident scene. After the yoga classes, he was able to sleep and calmly manage his stress.²⁶⁴ Finally, YFFR is being used by over 30 public safety agencies in the United States; the program is also being incorporated by the Chicago Police Academy into officers' basic training.²⁶⁵ Introducing yoga in the military has shown utility in stress reduction, and incorporating yoga in the first-responder and law enforcement world might help officers reduce their stress levels.

R. Christopher et al. reviewed the benefits of using mindfulness-based resilience training as of 2015 among 43 police officers.²⁶⁶ The officers in the study attended two-hour training blocks during their shifts over eight weeks, where they learned and used different aspects of mindfulness and applied them to policing. The officers were assessed during three parts of the training: (1) before training began, (2) at the week-four mark, and (3) at the end of training. The study's results showed improvements in the officers' resilience, mindfulness, and mental and physical health, as well as significant improvements in regulating their emotions. The officers also displayed reduced levels of stress, fatigue, anger, and burnout.²⁶⁷ Also, the SDPD is using meditation to train new police recruits in stress mitigation. According to a 2019 article in *California Police Chief* magazine, Assistant Chief Sandy Albreksten notes that mindfulness training, specifically

²⁶¹ Good News Network.

²⁶² Good News Network.

²⁶³ Good News Network.

²⁶⁴ Good News Network.

²⁶⁵ "Home Page," Yoga for First Responders.

²⁶⁶ Christopher et al., "A Pilot Study Evaluating the Effectiveness."

²⁶⁷ Christopher et al.

self-meditation, is being offered to civilian and sworn personnel at the SDPD, including police academy recruits.²⁶⁸ Thus, the use of mindfulness techniques and their incorporation in academy training may help officers better control their emotions and improve resilience.

Visualization has been shown to help reduce stress and improve performance and decision making. A 2009 study by Arnetz et al. that explored the efficacy of resiliency training involved 18 police officers who underwent guided imagery and visualization of stressful work events and mental skill rehearsals; this training also taught officers techniques to induce their own relaxation.²⁶⁹ The officers trained for two hours each day for ten weeks learning behavioral and cognitive coping skills, which included controlled breathing and meditation. Officers could practice these skills at home. The training also involved the use of biometrics, whereby the physiological vital signs of the officers were monitored before, during, and after simulated training events. As the training drew to a close, participants then faced a simulated critical incident, such as an armed robbery scenario. Several biological markers were measured, such as cortisol and heart-rate levels, behavioral performance, and perceived stress and mood. The results suggest that participants who had undergone resilience training perceived lower stress levels and displayed better, more effective performance under stress.²⁷⁰

Training in resilience techniques has been found to lower the amount of physical and psychological stress in law enforcement officers.²⁷¹ In a study examining police officers, participants practiced techniques involving self-regulation and coherence, essentially the ability to autonomously and consistently control one's emotions.²⁷² The idea was for the officer to regain control over his behavior, which would allow him to better manage stressful events. In the cited training study, McCraty and Atkinson took

²⁶⁸ Sandy Albreksten, "Day Zero to Retirement and Beyond," *California Police Chief* (Winter 2019): 16, https://www.californiapolicechiefs.org/assets/news/CPCA_2019_Winter_Magazine_Finalb.pdf.

²⁶⁹ Bengt B. Arnetz et al., "Trauma Resilience Training for Police: Psychophysiological and Performance Effects," *Journal of Police and Criminal Psychology* 24, no. 1 (April 2009), <https://doi.org/10.1007/s11896-008-9030-y>.

²⁷⁰ Arnetz et al., 5.

²⁷¹ McCraty and Atkinson, "Resilience Training Program," 44.

²⁷² Courtney E. Ackerman, "What Is Self-Regulation? (+95 Skills and Strategies)," *Positive Psychology*, November 21, 2019, <https://positivepsychology.com/self-regulation/>.

physiological baseline readings, exposed officers to self-regulation techniques, and then put the officers through various police training scenarios, which included pursuits, building searches, and domestic violence.²⁷³ The results were positive, with officers showing better coping skills and performance in the scenarios than the control group. In other words, officers trained in self-regulation and coherence were better prepared to handle a potentially dangerous situation, and they recovered faster. This finding was echoed by a San Diego police officer who had received the training:

Last week I was in a situation in which a person squared off on me and started reaching in his jacket. I went to my breath and activated coherence and never felt anything but calm. As I noticed the sirens of my backup arriving, I realized my heart was beating slowly. Every other time that has happened, I basically screamed for backup and it took me a whole day to calm down. When my Captain got there, he said he thought I was kidding when I put out the call because I sounded so calm on the radio. He asked what I'd been doing differently. This stuff is for real.²⁷⁴

In sum, mindfulness techniques, including controlled breathing, meditation, and visualization, combined with guided imagery and training using biofeedback can reduce stress and build resilience. Not only are these techniques useful in myriad occupations; they are useful in law enforcement where they have proven effective in helping to control stress.

²⁷³ McCraty and Atkinson, "Resilience Training Program," 48.

²⁷⁴ Rollin McCraty and Michael Nila, "The Impact of Resilience Training on Officer's Wellness and Performance," in *Stress in Policing: Sources, Consequences and Interventions*, ed. Ronald J. Burke (London: Routledge, 2017), 262.

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V. DISCUSSION, RECOMMENDATIONS, AND CONCLUSION

This thesis examined the stress law enforcement officers experience and possible stress mitigation techniques they might use to control stress more effectively. What follows is a discussion of issues relative to stress vis-à-vis police culture and recommendations for how to build resilience in law enforcement by incorporating psychological resiliency tools.

A. DISCUSSION

Law enforcement agencies need to better recognize and acknowledge chronic and organizational stress to protect the mental health of their officers. As this thesis has noted, a myriad of robust programs addresses the acute (short-term) stress and the occupational stress officers endure, especially after critical incidents. CISM, PFA, and peer support groups all focus on assisting an officer after there is a problem, but few programs address preventative care. However, an important piece of this puzzle involves reducing the stigma of mental health and changing police culture.

Reducing the stigma of mental health is a daunting task in any profession, but it is especially challenging in the law enforcement arena, where police officers are self-classified as “helpers.” Many who fall into this category are unwilling to admit they need help, primarily due to the stigma of needing help or not being able to handle a situation. One option is for law enforcement leaders to advocate an open discussion of mental health issues; if some police officers speak openly about the mental health struggles they have had, it may embolden other officers to come forward and seek help. And this help does not need to be in the form of psychiatric treatment per se, but rather could be as simple as having coffee with another officer who has dealt with a similar issue. Another way to shift the culture is to recognize mental and physical illnesses as equal: something that affects the brain should be treated no differently from something that affects another part of the body (e.g., a broken arm). This theory has limitations, of course: de-stigmatizing mental health is not an easy task, and attempting to do so within a police culture is admittedly difficult, but it needs addressing.

Such cultural change is a slow process, like a large ocean liner shifting course—a course correction can be identified and implemented, but change is slow to come and often imperceptible. One important aspect of shifting (versus *changing*) police culture is executive-level leadership. In any police agency, organizational change begins at the top with decision makers. Police leadership should provide an open channel of communication to discuss mental health issues; doing so might help reduce the stigma of asking for help. Another small step in shifting police culture involves the use of language surrounding mental illness. Officers should be mindful when discussing mental health–related issues in the workplace. Using pejorative language to describe someone dealing with mental health issues (calling someone a “nutcase” or a “loony,” for example) could dissuade a self-conscious officer from asking for help. For instance, if an officer silently struggling with a mental health issue is with his partner at work and hears his partner comment, “Anyone who can’t handle this stuff or needs to see a shrink is a nutcase and should not be in this line of work,” the affected officer may decide not to seek help.

B. RECOMMENDATIONS

Reducing the stigma of mental health and changing police culture are monumental tasks, and this shift may be slow in coming (if at all) but bears addressing. There are other steps police agencies can take to improve the mental health of their officers. After exploring stress mitigation techniques, this thesis concludes with several recommendations that involve wellness programs, training, technology, and ongoing, preventative self-care.

1. Improved Wellness Programs

Many agencies already have wellness programs, EAPs or peer support programs, and one recommendation is to incorporate more mindfulness training into these programs. As research outlined in this thesis has shown, this type of training has demonstrated positive results in reducing stress and building resilience, not only in other professions but specifically in the law enforcement community. One example of how this is being implemented involves the SDPD and its use of meditation to mitigate stress. As previously discussed, self-meditation is being offered to civilian and sworn personnel at the SDPD, including police academy recruits. Providing employees with simple, virtually cost-free

techniques they can use to reduce stress would be beneficial not only to the officer but also to the department. In using these mindfulness techniques, officers may experience a reduction in stress and, more importantly, better cope with the daily stressors of the job. Agencies would do well to follow the lead of the SDPD and incorporate these techniques into their training programs, from day one through retirement.

Another recommendation is to increase the use of peer support in law enforcement. As previously mentioned in this thesis, officers are more comfortable speaking to other officers than immediately seeking out a mental health professional. Speaking with fellow officers provides them with an outlet, a safe, trusted way to discuss issues that may be bothering them. Agencies should emphasize the use of peer support personnel.

2. Tactical Psychological Training

Agencies equip officers with the physical tools to do their jobs—bullet-resistant vests, weapons, and vehicles—but fail to provide other necessary tools, that is, the psychological ones to combat stress and improve officer performance and mental health. Police training scenarios have typically involved presenting an officer with a scenario (e.g., a citizen encounter on the street or a burglary call) and emphasize the decisions made and tactics employed to successfully navigate the scenario. Rather than simply putting officers through these typical scenarios, agencies would do well to incorporate stress-reduction techniques into the training. When officers respond to potentially life-threatening calls, which induce stress, physiological changes occur in their bodies; training to recognize those changes and how they affect the officer should be part of the scenario.

An example of this training appears in the work of McCraty and Atkinson, referenced in the previous section, which includes resiliency training as part of scenario-based training events. This training uses visualization techniques that mentally guide the officer through a training scenario, providing the officer with a powerful tool used to complete a task under pressure. Their data suggest that building resiliency training into tactical training can reduce stress and improve decision-making. Using evidence-based preventative training to prepare officers mentally would be beneficial to the officer, the agency, and society.

3. Better Use of Technology

Technology is already used to accomplish the law enforcement mission, from computer-aided dispatch programs to body-worn cameras. While technology makes police work more efficient, it can also be used to make police officers healthier. As noted previously in this thesis, technology is available to track physiological changes in the body, particularly when these changes are stress-induced. By using wearable technology, whether wrist-worn devices such as an Apple Watch or a specially designed shirt with sensors embedded in the fabric, officers could better track their physical condition as it relates to stress. These devices could provide biofeedback, reminding the officer to breathe deeply or alert the officer if his heartrate is too high. Along these same lines, data regarding the officer's physiology could be collected over time, and the data could prove useful in determining levels of stress.

Smartphones are ubiquitous, and many police departments issue them to their officers. They can be used as hand-held computers to run criminal history queries or to receive dispatched assignments. Some departments link their EAP to the officer through the smartphone application; the NYPD uses one such application, which focuses on mental health. With the click of a button or a swipe of a finger, an officer can find the nearest peer support member or chaplain, or connect immediately to a suicide hotline. As discussed earlier, the Idaho State Police has integrated its wellness program with officers' smartphones, partnering with a company that brings the department's Trooper Wellness Kit directly to the trooper out on the road. With this application, troopers can readily access topics such as depression, emotional health, sleep, mindfulness techniques, and stress management.

Law enforcement agencies may be unable to provide their officers with expensive smartphones, but nearly every officer likely owns a personal smartphone. If the agency does not provide the officer with this tool, the officer can download commercially available applications that perform similarly to the application used by the Idaho State Police. The Blue Life Coach application contains breathing, relaxation, and mindfulness techniques available at the touch of a button, as well links to crisis resources and podcasts that tackle

mental health issues.²⁷⁵ Officers may often be reticent to spend their own money for police equipment not provided by the department. In this case, the Blue Life Coach application is free and might help reduce officers' stress.

4. Ongoing and Preventative Stress Care

Police agencies have programs in place to help officers mitigate stress, but there should be more emphasis placed on these programs regarding preventative and ongoing stress care. Most EAPs offer training or articles on how to reduce stress, but the information is often buried deep in agencies' EAP websites or provided once a year in the form of obligatory online training. Stress mitigation techniques should be at the forefront of these programs and trainings because they are virtually cost-free, easy to learn, and convenient. For example, DEA's EAP once held a three-hour class in which an expert taught controlled breathing techniques to agents. The agents who learned these techniques marveled at the efficacy of employing controlled breathing to reduce stress and control emotions. Agencies should incorporate this simple technique into their mandatory training programs.

Law enforcement agencies have long had physical fitness requirements for their officers (physical examinations by doctors as well as physical agility requirements), but they do not require similar mental health examinations. Officers are evaluated on whether they can physically do the job but not on whether they can mentally or emotionally do the job. One recommendation is for a mental health evaluation to accompany the physical examinations required by agencies. There are limitations to this recommendation and probable issues with its implementation (e.g., union pushback), but the mental health of our officers should be regarded as important as their physical health.

Along the lines of mental health examinations (if those are a bridge too far), perhaps agencies could adopt and implement self-assessment surveys. A "check up from the neck up" could include a simple online self-assessment for employees. If mandating a self-assessment is not feasible, agencies could at least offer a voluntary survey through their wellness program. The U.S. Army uses something called the Global Assessment Tool, an

²⁷⁵ "Home Page," Blue Life Coach, accessed March 3, 2019, <https://bluelifecoach.com/>.

online survey designed to help each soldier maximize his potential and enhance readiness.²⁷⁶ The voluntary questionnaire helps the soldier assess one's emotional fitness in addition to assessing career goals. Law enforcement agencies should adopt a similar voluntary self-assessment tool, which might provide officers with tailored, valuable feedback on their emotional and mental well-being.

C. CONCLUSION

The agent in the opening story of this thesis nearly lost his life due to the cumulative effects of stress over a long career; he survived because he recognized how he had been affected by the stress of 30 years in law enforcement and bravely sought help when it was nearly too late. That begs the question, could the agent have been able to mitigate stress during his career by incorporating psychological resiliency tools and techniques? Could all officers benefit from the use of these techniques throughout their careers to help build resilience? It is the hope of this thesis that officers can and will use these techniques to better mitigate stress and improve their mental health, before they find themselves out of options or, worse, become a statistic.

In January 2020, an article in *USA Today* cited a staggering 228 police officer suicides in 2019, far more than were killed in the line of duty.²⁷⁷ This number was up from the previous year but is consistent with trends showing more officers dying by their own hand. This figure demonstrates that mental health issues are severely affecting police officers, and there is a need to address this mental health crisis. The article notes that discussing mental health issues in law enforcement has been taboo, and police culture is slow to change.²⁷⁸ The goal of this thesis was to examine the most promising psychological resiliency tools and determine how their inclusion in police training might reduce stress and improve resilience in law enforcement officers. Police work is known as one of the

²⁷⁶ "Millionth Soldier Takes the Global Assessment Tool," U.S. Army, accessed December 1, 2018, https://www.army.mil/article/51349/millionth_soldier_takes_the_global_assessment_tool.

²⁷⁷ Joel Shannon, "At Least 228 Police Officers Died by Suicide in 2019, Blue H.E.L.P. Says. That's More Than Were Killed in the Line of Duty," *USA Today*, January 2, 2020, <https://www.usatoday.com/story/news/nation/2020/01/02/blue-help-228-police-suicides-2019-highest-total/2799876001/>.

²⁷⁸ Shannon.

most stressful occupations, as evidenced by stress-related illnesses such as depression and anxiety, and a high suicide rate. Most law enforcement agencies have resiliency, wellness, or employee assistance programs to address acute and chronic stress, and most of these programs have components to assist officers after a stressful event, such as mandatory debriefings or counseling sessions. While these are important, this thesis posits the focus of such programs should be identifying and using preventative stress-reduction techniques.

The objective of this thesis was to identify stress-reduction techniques that could be used in law enforcement, with the overarching goal of improving the mental health of officers. If police officers can more easily regulate their emotional states and improve their situational awareness, they will have greater clarity when policing their communities; this may result in better performance, lower stress levels, and a healthier police officer. This thesis identified several evidence-based mental preparedness techniques used widely in many occupations; these include mindfulness techniques such as controlled breathing, meditation, guided imagery, and visualization, as well as the use of biofeedback to enhance officer performance and reduce stress. These techniques have been shown effective, and law enforcement agencies should apply them. Law enforcement leaders can and should include these skills in training curricula as they will help inoculate officers against the effects of stress and increase resilience. In doing so, law enforcement agencies might reduce risk and liability to their departments. There should be a focus on prevention and using resilience techniques to improve officers' mental health and performance; waiting to intervene until after a stressful event or critical incident is too late.

Healthy officers benefit law enforcement agencies as there is reduced burnout, fewer medical retirements, and fewer health costs, and they benefit the community, too, as healthy officers are better officers. Stress is an inherent part of policing, and ignoring its detrimental effects on officers' mental health does a great disservice to the officers and the communities they serve. Agencies must choose to recognize the effects long-term stress has on their officers. Agencies should prioritize the use of resiliency techniques and make these available from day one of the academy to retirement. Incorporating these techniques throughout an officer's career will build a more resilient, healthy officer.

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